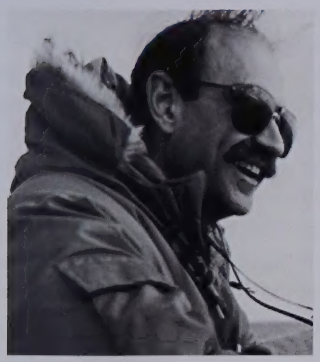
SPRING / SUMMER • 2024

The Polar Times

THE JOURNAL OF THE AMERICAN POLAR SOCIETY

PRESIDENT'S MESSAGE



Welcome back, loyal *Polar Times* readers. Editor Larry Rechlin has assembled a nice collection of articles for your attention, aiming to keep your focus on the polar front, with some focus on military aspects of the polar regions, given increased activity by Russia and China in the areas.

We have a few more notes on the Board of the American Polar Society, noting the backgrounds and interests of the leadership team. Of course, we are always looking for increased participation of our members, but more on that later. But we've provided good articles by northern security matters with efforts by experts Pauline Baudu, Dr. Tobias Etzhold, Hayley Collings, and Lawson Brigham, the latter focusing on the Russia's icebreaker fleet. We will also get some updates on the increasing impacts of climate change and an excellent nice piece in IAATO, the International Association of Antarctic Tour Operators, which has been essential in regulating tourism since 1991, and has helped the Antarctic Treaty members in responding to the huge increase in interest in the Southern Continent.

The ongoing Russian war effort in Ukraine continues to plague us, and has produced disruptions everywhere, especially in the polar regions. Historically, cooperation in the polar regions has been very good, even in the bad old days of the Cold War, but the current global problems are showing some signs of disturbing the normal cooperation in our areas of interest. I like to hope *The Polar Times* does its part by emphasizing cooperation and good news!

The main international organizations looking at polar matters, the Antarctic Treaty, the Arctic Council, and Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) are beginning to return to their regular scheduled meetings, since the polar areas have always been areas of good international relations – stressing cooperation, avoiding military conflicts, and even in the case of the Antarctic Treaty, banning military activities. As your readers know, the American Polar Society is the only non-governmental organization which focuses on both polar regions; offering members a broad range of environmental, conservation and social issues, which engage all of us.

Some mention in the *Polar Times* should be made of upcoming events, including the next Antarctic Treaty Consultative Meeting (ATCM) in Kochi India in May, where tourism will be a main focus. The new approach was to create a special working group for the ATCM. As described in the final report of last year's ATCM (XLV 2023) in Helsinki, " the Meeting agreed to establish a Special Working Group (WG 3) which would deal with the Development of a Tourism Framework." The next Scientific Committee for Antarctic Research (SCAR) Open Science Meeting (held every 2 years) is coming up in August. Lastly, and sadly, I would note the passing of two giants in research in the McMurdo Dry Valleys (MCM) Craig Cary (NZ) and Diana Wall (US).

Prof Craig Cary was a distinguished Antarctic scientist, and expert in terrestrial Antarctic ecosystems who made numerous important contributions to SCAR's work as well as providing invaluable mentoring and support to many individuals. Over four decades, Craig dedicated his research to studying microbial life in extreme environments, engaging in deep-sea expeditions to hydrothermal vents and conducting 18 seasons in Antarctica.

For more than 25 years, Dr. Diana Wall, was one of the world's most internationally respected environmental scientists and inaugural director of Colorado State University's School of Global Environmental Sustainability. Dr. Wall and her colleagues researched in the Antarctic McMurdo Dry Valleys, and the Wall Lab at CSU helped clarify the critical links between climate change and soil biodiversity.

I close with an invitation, if you aren't yet a member of the American Polar Society, to join us. And to all, we welcome your interest and invite your participation in our organization. Regarding the *Polar Times*, we encourage submission of your articles and contributions. And those long-time readers are also asked to consider seeking membership on the Board of Governors. Many of the current members are getting older, and we welcome some newer participants. We are also searching for a new webmaster to update and maintain our APS website. But, for now, enjoy our efforts in the Spring/ Summer edition: good reading!

Sincerely,
Ray Arnaudo

Scar Events **Craig Cary Obit** **Diana Wall Obit**

The American Polar Society was founded on November 29, 1934, to band together all persons interested in polar exploration. Members are entitled to receive *The Polar Times* twice a year. The American Polar Society is classified as a tax-exempt organization under Sec 501 (C)3 of the IRS Code. For more information about the American Polar Society, contact us at: americanpolarl@gmail.com.

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THE POLAR TIMES
SPIRNG/SUMMER - 2024 | Volume 6, Number 1

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LETTER FROM THE EDITOR

It is hard to believe that it has been a year since I took over being the Editor of *The Polar Times*. I must admit that it has had many challenges considering that I have no media or journalism background. I went out on the limb when I was asked by the Board to consider the position. I told them with a lot of support and guidance that I would consider giving it a try. I also told them that I would gladly step aside if I did not meet their expectations. Well, here I am ready to publish my third issue.

I do have to be thankful for a variety of reasons. First, I appreciate the support that the Board and you, the members, have given me. Your critiques, suggestions, and recommendations have not gone unnoticed. I would not have survived without the tremendous support from Scott Corsetti, our Art Director, has given to making *The Polar Times* a class act publication. He has put up with many of my last-minute edits, cuts, snits and frustration as only a true friend and ally would have; thank you, Scott.

The real bonus to me, however, has been meeting and interacting with so many wonderful "expeditionists" through their contributions of articles, sharing of knowledge, and media. With each issue, I have gained so much knowledge regarding the polar regions. It has been because of all these wonderful contributions that have been shared through our common bond for the love and conservation of the polar regions!

I strive to enlarge our joint community and ask that all of you help in that endeavor. Ways you can support the American Polar Society community include getting involved and volunteering with APS; encourage friends and family to join APS; advocate and demonstrate conservation of the polar regions; and finally, financially support many of foundations and non-profits such as those highlighted in *The Polar Times*.

An example of how *The Polar Times (seen below)* has evolved was evident when Charles H. Lagerbom submitted his article on the ***HERO***. I asked our archivist Robert Breyer to find the article that was previously published; it is dated Spring 1993. I hope the readers notice the difference between this edition and the 1993 edition due to technological advancements in the media world.

Larry Rechlin
Editor

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Secretary's Letter

Malcolm Browne and Dick Chappell contacted me nine months ago with the request that the Hero Foundation begin publishing *The Polar Times* for the American Polar Society. They assured me that *The Polar Times* and, hence, the American Polar Society were dead if we did not take over. It had not been published since 1986, and editor August Howard had passed away two and a half years later (see article on page 3). Expecting to find a way to rationalize turning

in scope," she said. She can see the future much clearer than most. Della assumed the job of editor.

Next, Arthur Dumont, who edits the *Ice Cap News*, offered to handle the printing and mailing. Things were beginning to shape up. Others volunteered to help write and edit.

We decided to shoot for April 1993 to get out the first issue. As you can see, we have tried to capture the essence of August Howard, but there are some changes. We are also increasing the annual contribution to $10 ($12, foreign) to cover costs (see application form below).

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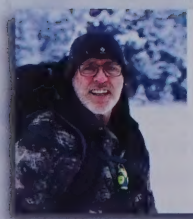

FEATURED PHOTOGRAPHER | DAVID BUSSIERES

David is featured on our Photo Essay on page 12. In addition, David's photography is featured on our Cover, Inside Front Cover, Inside Back Cover and Back Cover.

Instagram: david_bussieres_photography

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MEET YOUR BOARD

The Leadership of the American Polar Society is comprised of the President, two Vice Presidents, Secretary, Membership Director, Treasurer and Corporate Relations Director, plus four Board Members and six Emeritus Members. The original article regarding Board Members appeared in the 2023 Spring/Summer of *The Polar Times*.

Robert Byrd Breyer, *Corporate Relations Director*

Robert Byrd Breyer is the oldest grandson of Admiral Richard E. Byrd. Bob is a native of Los Angeles where he was an Eagle Scout and earned B.S. and MBA degrees from USC. Bob was able to get to know his Admiral grandfather before he passed away in 1957. Bob was fortunate to know some of his grandfather's expedition members including Larry Gould, Norman Vaughan, Tom Poulter, Amory Waite, and Pete Demas. 'Oh, the stories they told!' was Bob's response when questioned further about this grandfather's friends.

Growing up Bob had a burning desire to visit Antarctica, and in 1973, he stumbled across a newspaper ad for plumbers and mechanics to work at the South Pole. An engineering firm, Holmes and Narver Inc., won a contract from the National Science Foundation to build a new science station and they needed workers. Bob was hired to work general construction in the 1973-74 summer. In 1974-75 he was promoted to South Pole Construction Camp Manager and the new Dome station was dedicated in January 1975.

In November 1979 Bob was invited by the National Science Foundation to return to Antarctica with 11 other participants to commemorate the 50th anniversary of his grandfather's South Pole flight in 1929. On Nov. 28 the NSF group flew from NZ to McMurdo on an Air Force C-141 that was running 20 minutes behind an Air New Zealand DC-10 en route to Antarctica on a sightseeing trip that sadly crashed into Mt. Erebus, killing 257 people. So, what should have been a celebration of a historic aviation accomplishment was tinged by tragedy. The NSF group flew to the South Pole the next day on a C-130 to commemorate the 50th anniversary of Admiral Byrd's flight at the South Pole marker.

In 2019 Bob worked with Sheldon Bart to select a web design firm to redesign the APS website. The result is our current website which won a design award. Bob and Sheldon continue to work with a feasibility consultant and a nationally known museum architect on the concept for a National Polar Museum. Currently Bob produces websites (www.admiralbyrd.com), PowerPoints, and videos about his grandfather and the polar regions and has presented to colleges (Harvard, Ohio State), schools, civic groups, book clubs, and private parties.

George Blaisdell, *Membership Director*

George became aware of the American Polar Society when he started doing research in Antarctica in 1989. An old-timer told him about the APS and encouraged him to join. Many years later, when George started working at the National Science Foundation in the Office of Polar Programs, he engaged with folks from the State Department. That interaction increased his appreciation of the role organizations like APS can play in helping raise awareness of not only the scientific reasons for careful management of the polar regions, especially Antarctica, but also the political reasons. A few years ago, George saw an article that described the low point that APS was then in. He wrote to the APS Board with some ideas and volunteered to play any part he could in assisting to revive the Society. Of course, that promptly led to him being asked to join the Board. Since then, George has been the Director of Membership.

George grew up in Wisconsin and has a picture his parents took of him when he was 4-years old, sitting proudly in an "igloo" that he had carved out of a large snowdrift in their yard. He understood that he spent most of the day in there and put up a fuss when he was told he could not sleep in his igloo overnight.

His close connection with the outdoors remained strong throughout high school. Long distance cycling through the farm fields where he lived; open water swimming in the lake at his family's summer cabin; canoe camping in the Boundary Waters. In college, George was drawn to earth sciences and upon gaining a degree in geology, looked forward to spending a career outdoors "chipping away at rocks". To his surprise, at the time of his college graduation, the jobs available were all drilling for oil and located in HOT parts of the country. While George loves the outdoors, he admits that he does not do well when temperatures hit or exceed about 80°F.

George's solution was to pursue graduate studies in the Upper Peninsula of Michigan where summer temperatures rarely exceed 80°F and winters are long and serious. George's classes included some cold regions' topics, and some winter field work. He noticed that much of the literature associated with his cold regions' studies stemmed from a specialty government laboratory in New Hampshire. George stated that it was a no-brainer to pursue a job there upon graduation. And so it happened that he began a career as a cold regions research engineer in 1979, which he is still happily practicing to this day.

George would like to help APS to move towards a more vigorous organization. As a person with instinctual organizational skills, George has helped APS to possess an accurate and up-to-date database of the membership. APS's archive of Polar Record publications is becoming consolidated and completed. George believes that the APS still needs to articulate and live their mission and expand their visibility in the general society. George looks forward to helping APS advance to becoming a vibrant, relevant, and recognized diverse group of polar regions advocates.

WORLD'S MOST CAPABLE ICEBREAKERS: RUSSIA'S NEW *ARKTIKA* CLASS

By Lawson Brigham

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EVP for Periodicals, Membership, and Marketing
U.S. Naval Institute

*The **Arktika** is the first in a class of five new Russian icebreakers that the country will use to escort commercial vessels along the Northern Sea Route and provide coastal escort during winter months.*

The nuclear-powered icebreakers *Arktika* and *Sibir* – the first two in a class of five – are fully operational and were accepted into Russia's Rosatomflot fleet in late 2021 and early 2022. Both are escorting commercial cargo vessels in winter sea ice along the Northern Sea Route (NSR) – Russia's National Arctic Waterway.

These new icebreakers, the world's largest and most powerful, each have two RITM-200 light-water reactors that produce pressurized water and steam for a turboelectric generating plant. The steam turbines drive two turbogenerators that produce electricity for three electric motors; the motors drive three shafts and four-bladed propellers. The system produces 80,000 maximum shaft horsepower, the most power on board any icebreaker, and the *Arktika* can break 9 feet of level sea ice at a continuous 1.5 to 2 knot speed, as reported by her designers. Few sea ice features will slow or stop this ship from continuous forward motion with such high available power and a large displacement of 33,530 dead-weight tons. Also notable are the 569-foot length and 112-foot beam, which creates a wide track astern for ships under ice escort.

Three follow-on ships – all being built by the Baltic Shipyard in St. Petersburg and in various stages of construction – also have geographic names: *Ural*, *Yakutia*, and *Chukotka*. Rosatomflot, manager of the nuclear icebreaker fleet and a division of Rosatom, the State Atomic Energy Corporation, has indicated a need for two more ships in the class to maintain year-round navigation along the NSR. These new ships will replace two classes of nuclear icebreakers: the shallow-draft *Taymyr* and *Vaygach* (operational since 1989 and 1990) and older ships of the original *Arktika* class. A key objective is that Rosatomflot one day will operate a fleet of identical ships providing enhanced efficiency and cost savings. For example, engineering parts and the ship's officers and crews can be more easily interchanged within the fleet.

One of the critical features of the new *Arktika*-class icebreakers is their dual-draft design, which allows winter operations in the shallow, estuarine waters of the Ob and Yenisey Rivers in western Siberia. These waters provide bulk carriers, tankers, and liquefied natural gas carriers access to ports servicing natural resource development projects. By deballasting water, the *Arktika* class can reduce its normal displacement by 8,000 tons to 25,540 deadweight tons; the normal, deep-water draft of 34 feet is reduced to a lower draft of 29 feet. There is some concern, however, that the minimum deadweight tonnage after ballast water discharge remains too heavy for the ships to operate effectively in the fresh and brackish waters of the Siberian rivers. Future winter operations will provide more evidence of any operational limitations in shallow, coastal waters.

The hull design and propulsion system appear conservative and consistent with earlier Russian and Soviet nuclear icebreakers. Traditional shafts and a single rudder are provided; no pods or steerable (electric) propulsion units are used; and propeller blades are bolt-on, not controllable pitch. The reported crew size is 75, down from more than 100 on board earlier Russian nuclear icebreakers. This reduction likely means greater systems automation, as well as indicating more routine maintenance will be conducted ashore at the base in Murmansk.

These state-owned vessels are designed primarily for commercial ship escort and ice operations to extend the navigation season along the NSR. However, they are highly valuable, multi-mission assets, and using the unlimited endurance of nuclear ship propulsion, can provide year-round access to the entire length of the ice-covered Russian maritime Arctic. They can fully support national security interests by escorting naval vessels along the NSR and assisting the resupply of bases on the Russian Arctic islands. They also can conduct scientific expeditions, but it is doubtful they will take tourists on voyages to the North Pole as previous Russian icebreakers have done since 1991. The new *Arktika*-class icebreakers are extraordinary ships that provide the Russian Federation with a unique, surface ship capability anywhere in the Arctic Ocean.

CLIMATE SECURITY RISKS, GAPS, AND OPPORTUNITIES OF THE CANADIAN ARCTIC

"What happens in the north impacts the world, and when you look at the security issue and climate change, the world is paying attention more than ever," noted Canadian Governor-General, Mary Simon, at an event at the Arktikum Science Centre in Rovaniemi, on February 9th, 2023.

Sami reindeer herders

By Pauline Baudu

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vanguardcanada.com

Her comments reflected the profound and ongoing effects that Russia's re-invasion of Ukraine in February 2022 has had on Arctic security, leading to a renewed global focus on the region – a focus which, in Canada, further intensified recently with the Chinese spy balloon incident acting as a reminder of the role that the Canadian Arctic plays in continental defense. Governor-General Simon's remarks also mirror how interconnected climate and security realities are, in a region where freezing geopolitics interact with thawing landscapes.

In the Canadian Arctic, which is warming at least three times as fast as the rest of the globe, the physical impacts of climate change include permafrost thaw, decreasing snow cover, reducing summer sea ice, and sea-level rise leading to coastal erosion and flooding (in the Beaufort Sea, sea level has been rising by almost an inch a year over the last two decades). Climate change also contributes to changes in Canadian Arctic ecosystems such as tundra greening and shifting boreal tree line due to intensifying boreal wildfires- ocean acidification, and increased precipitation.

Climate change is increasingly being recognized as a threat (or risk) multiplier, as its effects interact with and have the potential to exacerbate pre-existing threats and other drivers of instability to contribute to security risks. To advance Canada's awareness of these risks, the Canadian Security Intelligence Service recently published an analysis outlining how climate change compounds and accelerates other security issues.

In the Canadian Arctic in particular, beyond threats to landscapes and ecosystems, climate and environmental impacts converge with evolving strategic and security realities, posing a threat to human and national security.

Climate impacts in the Canadian Arctic threaten human and national security

Human-security risks

The primary and most pressing risk from climate change in the region lies in how it affects the human security, health, livelihoods, traditional lifestyles, and identity of local, mostly Indigenous, communities.

In particular, thawing permafrost exacerbates the pre-existing challenges related to the limited and underfunded local infrastructure, as homes, roads, runways and bridges are sinking in while pipelines and sewage systems are collapsing. In Iqaluit, this leads to serious environmental and health risks due to unintended spills and the contamination of freshwater supplies. Furthermore, in a region subject to the tyranny of distance, and where mobility is crucial to economic activity and to the survival of remote communities, the warming weather fragilizes ice roads and undermines hunting practices and the reliability of transportation, leading to more frequent accidents, and ultimately threatening food security. Rising sea levels also endanger entire coastal communities, with some of them being forced to relocate.

Northern communities also face the security consequences of intensifying maritime activity in slowly opening waters, as increasing navigation in the Canadian archipelago means higher risk of environmental damage through oil spill, release of other pollutants, and damage to important marine life zones. Lastly, shifting migratory routes for animals due to climatecaused loss of habitat means both higher-risk of animal-borne diseases and limited access to traditional food sources, such as caribou, seals and fish species.

Risks to national security

Climate change in the Canadian Arctic also poses threats to national security on multiple levels, ranging from conventional to hybrid issues.

As competition may intensify for a more accessible Arctic which is expected to become more economically viable, the enforcement of Canada's sovereignty is going to be challenged. Indeed, Canada has limited resources to monitor and respond to unwanted activity in its vast Arctic territory, including in the Northwest Passage – where legal status has long been disputed by other Arctic stakeholders.

Raytheon Canada Limited via Eye on the Arctic

In the grey-zone dimension, climate change is likely to amplify opportunities for malign actors to engage in the Canadian Arctic through below-the-threshold operations, aiming at destabilizing Canada by creating or instrumentalizing vulnerabilities, and blurring the line between legitimate forms of engagement and malign behaviors. Case-in-point for this are the activities carried out by China, which long-standing Arctic ambitions are often clashing with the interests of Canada and of other sovereign Arctic countries. Climate change may empower Chinese hybrid activities in the Canadian Arctic in several ways, from justifying a deeper scientific footprint to monitor climate impacts in strategically-significant locations to enticing Chinese investments in the Canadian mining sector as part of the clean energy transition. Furthermore, as warming waters are challenging global fisheries and drawing new fish species to the North, Chinese fishing fleets can use the opportunity to enter Canadian Arctic waters, carry out reconnaissance activities and test gaps in Canada's maritime and communication capacities. It is also worth noting that the multiple human-security risks from climate change outlined above intersect with the national security risks stemming from hybrid tactics, as climate change undermines societal resilience to external threats, such as cyberattacks or espionage activities.

Furthermore, climate effects are challenging military readiness in the Canadian Arctic, as they impact missions, operational plans, and installations in the region. As ice melts, permafrost thaws, and storm behaviors evolve, damage to infrastructure will affect northern military installations including runways, heating systems and energy supply. Melting ice roads will disrupt access to bases and undermine transportation and supply. Such risks may be particularly problematic for the surveillance stations that are part of the North Warning System: should they become increasingly difficult to operate, this may, in turn, weaken their missile surveillance and warning capacities. Moreover, freezing rains, which have been found to be shifting northward and increasing in occurrence in the Canadian winter due to climate change, have major consequences for ground and air transportation and are already impacting the readiness of air forces stationed in the North. Of note, in a recent, high-profile instance, freezing rains have been presented by Chief of the Defense Staff Gen Eyre as the reason why Canadian fighter jets were delayed in departing to shoot down the Chinese balloon flying over Yukon on 4th February, 2023.

Lastly, climate impacts will put a growing strain on Canadian forces, as they will need to address a surge in concurrent emergencies such as search-and-rescue and environmental-disaster response, related to the growing volume of maritime traffic in challenging Arctic conditions. Other concurrent unconventional issues requiring resources and attention from Northern forces in Arctic waters may include illegal shipping, smuggling, and other transnational organized crime activities.

Policy opportunities for a climate-resilient Canadian Arctic

Considering this wide array of climate-related risks, Canada has an opportunity to deepen the integration of climate impacts across Arctic security planning and processes, and to adapt its security structure to anticipate and respond to evolving climate-security threats.

Championing climate adaptation and mitigation from military forces:

This effort should entail proactively adapting Canada's Arctic military infrastructure and equipment to rapidly changing climate conditions, in order to safeguard the Canadian Armed Forces' ability to enforce sovereignty and to project force into the region. In this perspective, increasing Arctic presence and investing in maritime and space-based assets will be key to closing the long-standing gaps in Canada's Arctic maritime domain awareness. Furthermore, the Canadian Armed Force's (CAF) climate security efforts in the Arctic should include working to improve its energy consumption and efficiency and minimizing its environmental footprint. Efforts toward greater energy resilience would further contribute to improving the CAF's military performance in the region by overcoming the challenges related to remoteness and mobility.

Conceptualizing multipurpose infrastructure through integrated thinking:

Given the extent of the challenge, and the profound nature of the Canadian Arctic infrastructure gap, a whole-of-government effort is required, in partnership with civil society and the private sector, to drive defense and energy technology innovation and build a multipurpose, climate-resilient and low-carbon infrastructure benefitting both civilian and military communities. Only an inclusive and coordinated approach advocated by Indigenous-led organizations such as Arctic360, will ensure that local communities benefit economically from these investments, and that their cultural practices and self-determination are not threatened.

Similarly, efforts to advance climate security in the Canadian Arctic should focus on understanding the crucial, yet often overlooked, Indigenous traditional knowledge in both the security and scientific domains, and on integrating this knowledge into foresight efforts, decision-making process, and military training and operations.

Strengthening continental and transatlantic cooperation:

Finally, as issues related to climate change and security transcend boundaries, Canada will need to cooperate with Arctic allies and partners to design innovative solutions and capitalize on knowledge and capabilities.

In particular, the United States, Canada's closest military ally, has boosted its focus on climate security and resilience in recent years, including in the design of the White House's Arctic strategy released in October 2022. The close partnership between Canada and the U.S. should move toward stronger cooperation in responding to climate impacts in the Arctic. This means systematically incorporating the climate factor in joint military training and exercises and agreeing on equitable investments for the upgrade and climate-resilience of the North Warning System to strengthen continental defense.

Transatlantic cooperation with allies and partners will also continue to be key. In this regard, the new NATO Center of Excellence on Climate Change and Security (CCASCOE), to be hosted in Montreal, should serve as a platform to coordinate national climate-security efforts in the Arctic and provide guidance for allies and partners to operate sustainably in the region. Activities may include wargaming and simulations that are specific to the climate challenges faced by military forces in the Arctic, as well as harnessing relevant technical expertise – such as Finland and Sweden's green energy industry and innovation capacities – and buttressing partnerships with local and Indigenous communities to ensure responsible operations. By taking the lead on NATO's Arctic engagement through CCASCOE, Canada is well positioned to ensure that human security, as well as sovereignty, are thoughtfully considered as part of NATO's ascension in the region.

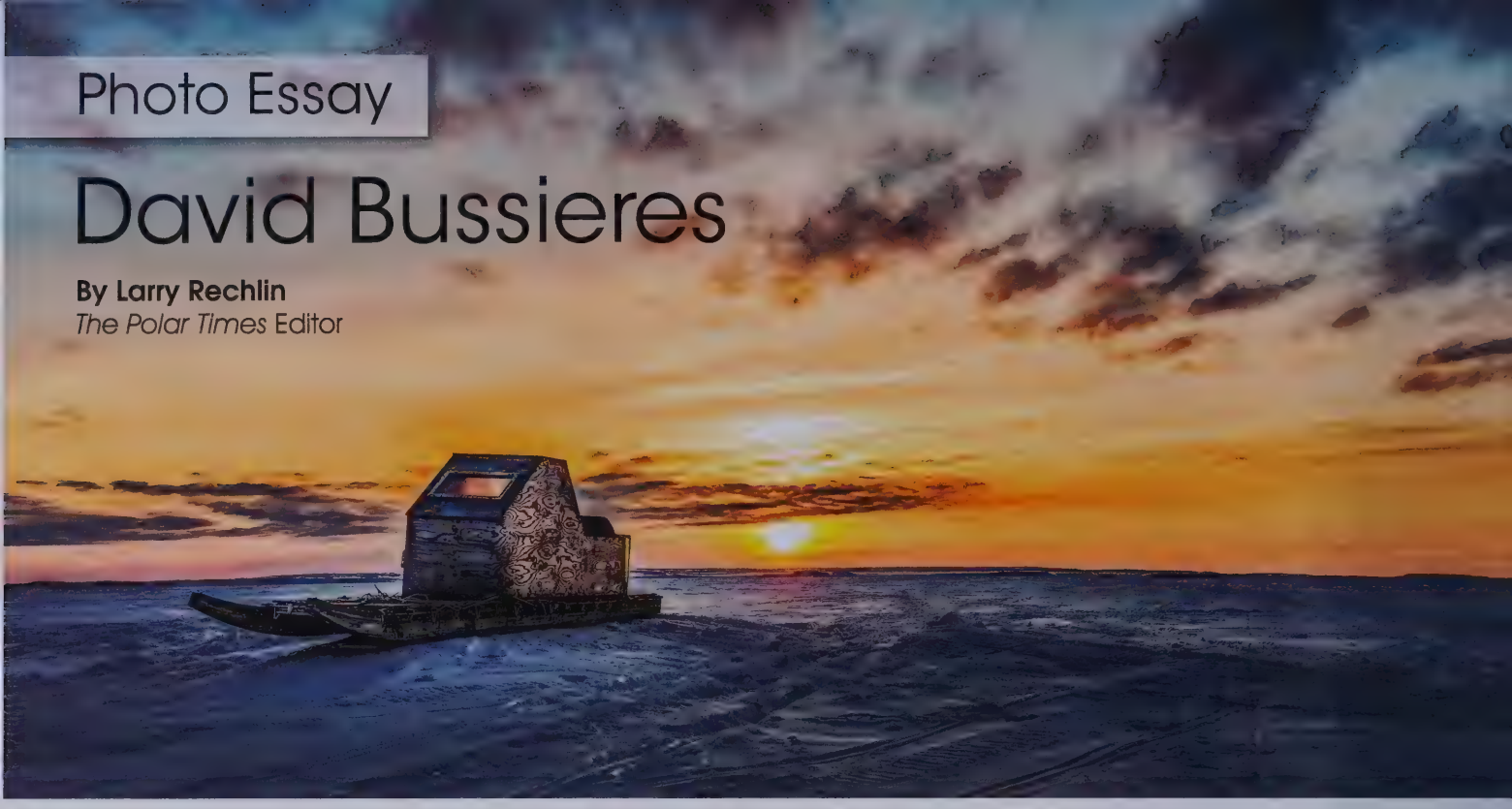
Addressing climate security risks in the Canadian Arctic in a proactive, coordinated, and integrated manner will ultimately result in advancing Indigenous reconciliation, enhancing continental defense, and establishing Canada as a leader on the international Arctic scene. "Strong at Home, Secure in North America, and En-gaged in the World."

Pauline Baudu, is a Senior Fellow at Arctic360 (Toronto), Associate at Arctic Security Consultants (Ottawa) and Nonresident Research Fellow at the Center for Climate and Security (Washington, DC)

Photo Essay

David Bussieres

By Larry Rechlin
The Polar Times Editor



*"**The Land of the Midnight Sun**"; in the Nunavut community of Kuglugtuk May of 2022 during the full 24-hour sunlight period. David was hiking on the Arctic Ocean at midnight The Qumuttiik (Inuit sled pulled by dogs or snowmobiles) was the perfect prop in the foreground to support the photograph hinting of the location being somewhere in the Arctic.*

David Bussieres has developed his passion for photography over nearly forty years. He is self-taught and has not had any formal training in the art of photography. David has been in mental health nursing for 25 years; the last 10 in Canadian Arctic communities. The ability to work in the Canadian Arctic has provided David to be exposed to some great nature photographic opportunities.

David and I are members of the Facebook group Canadian Landscapes. Larry was intrigued by a post that David had made with The Aurora Borealis "One belief in Inuit culture is the Northern Lights are the spirits of those who lived before us play in the sky." That post was the start of the dialogue with David about his photographic works.

When David was asked, "Why Photography"? His response was as follows:

> *"It goes along perfectly with being in nature. It's a lifelong companion. It's the most consistent source of joy and satisfaction, a place of escape, as well as a place to connect. It's a place where all the noise of the world goes away, and you get to experience the loudness of silence."*

David believes that the intention of a nature photographer is to inspire others to develop a deeper connection with nature and foster a greater appreciation for the wonders that surround us. Through his images, he hopes to ignite a sense of curiosity and reverence for the natural world, encouraging viewers to explore, protect, and cherish our planet.

***"Welcome to Nunavut"** - Cambridge Bay Nunavut. The common belief by the non-Inuit is that this is a "Welcoming Symbol". It is called a Inukshuk; a belief that these piles of rocks are more commonly known to mark travel for the Inuit hunters.*

In the community of Gjoa Haven. David reflected that the sun was setting, and the combination of the snow drifts and the mystery of these old ships peeked his creative interest and he captured the moment in the shots.

***Editor's Note:** The name Gjoa Haven is from the Norwegian Gjøahavn or "Gjøa's Harbour"; it was named by early 20th-century polar explorer Roald Amundsen after his ship Gjøa. It is in Canada above the Arctic Circle.*

DAVID BUSSIERES

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For enquires regarding prints, collaborations or commissioned work please feel free to contact him at dave@davidbphoto.ca or visit his IG at david_bussieres_photography.

You can visit David's print store here.

"Arctic Resting Place" February 2024 in the Canadian Arctic Community of Cambridge Bay Nunavut. David divulged that 'this picture came with a little more planning as I had been out a few nights in a row searching for the lights.' He scouted a few days trying to get an idyllic foreground object for reference but was at the mercy of 'when and where the lights would show, if they showed'. David reported, "like most photography you just have to be patient and when you see something coming together, start creating." For this photograph, he saw the row of crosses on the ridge and the moon was just on the other side of the ridge illuminating the crosses from behind. He got low enough to exclude the moon, so it did not overexpose the shot. The Northern lights were making their way towards the locations and when things lined up, he got the perfect photo shot! It is one of his favorite photos because of the light show being directly over the Inuit graves site and the connection with the beliefs that Inuit hold about the spirits of those before us and their spirits playing in the sky. David reflects, "When you get to witness something like this it is definitely spiritual in nature". He ponders, "will you find yourself questioning 'what if you do get to play in the sky when it's time to move on to the other side?'" He thinks that It looks like the spirits are having a blast and perhaps it might not be all that bad.

Settings for "Arctic resting place" 5 second exposure
1.8 aperture at 1000 ISO
Equipment: Camera Nikon Z9
Lens: NIKKOR Z 20mm f/1.8 S
Tripod: FML

David's Photography Tip for Aurora photography or any night time photography: *A tripod is an absolute must , using a lens with the largest F-Stop (Aperture} possible This allows for more light to hit the sensor This helps two things: 1) Reduces the time the shutter is open and keeps the stars from creating trails and 2) You get less "noise " in your photos which results in a cleaner image. Bonus tip: Also help shorten the time you have to freeze when it is -40c.*

Jan 1, 2024, in the community of Gjoa Haven Nunavut. David ventured out at midnight at-49 degrees celsius. He states, "the sky was on fire! Never in my 10 years had I ever witnessed anything like it". David reported that at times it felt like he could hear the waves of light buzzing like hydro wires and when he reached up the waves of light appeared as it was passing through my fingertips. He reported, "It was the most moving thing I have ever experienced in nature." David states that after what felt like three hundred takes of delayed shutter and long exposure of 15 to 30 seconds this was the result of his photographic skills. As a side note, he reports, "to this day I still have body parts I can no longer feel due to the extreme temperatures of that night, but it was well worth it."

POLAR BEARS
Energy Expenditures

By Larry Rechlin
The Polar Times Editor

I recently saw a news feature on CBS about researchers that had conducted research on polar bears and the energy expenditures for Polar Bears International. I was fascinated by the news feed and wanted to pursue an article for *The Polar Times*. The researcher wildlife biologists Anthony Pagano, Ph.D. and Karyn Rode, Ph.D. of the U.S. Geological Survey, Alaska Science Center were unable to write an article for TPT due to time constraints, but they did share photos and the YouTube link that was aired on CBS. I want to share the information from Drs. Pagano and Rode, but I also want to learn more about the amazing Arctic creatures.

The transcripts of the YouTube state

"...until now what polar bears eat and how many calories they burn while on land has been a bit of a mystery. Polar bears feed primarily on the blubber of ice associated seals, and they are uniquely adapted to the Arctic Sea ice environment and this very specialized diet. As the earth has warmed, Arctic regions have experienced two to four times greater increases in temperature compared to other parts of the world. Because of this, some polar bears are now forced on land for extended periods of time. This raises the question: can polar bears adapt to life with less sea ice?"

To study the polar bears on land, the scientists deployed video cameras on GPS collars to determine polar bear feeding behavior and measured the energy expenditure of twenty polar bears.

The findings of the study are

"Polar bears show impressive adaptability in their behavior. However, the predicted decrease in arctic sea ice leading

to longer periods spent on land still poses a serious risk of starvation for them. With the data that we've obtained, we can now estimate how forecasted sea ice loss may affect the survival and reproduction of specific populations, and that information's really important because it helps get a sense for how quickly changes may occur in different parts of their range, and that helps support management and conservation decisions."

I wanted to learn more about polar bear adaptation to longer time on land and was able to find the article by Pagano and Rode which was published in *Nature Communications.*[1] The abstract is:

> Declining Arctic Sea ice is increasing polar bear land use. Polar bears on land are thought to minimize activity to conserve energy. Here, we measure the daily energy expenditure (DEE), diet, behavior, movement, and body composition changes of twenty different polar bears on land over 19–23 days from August to September (2019–2022) in Manitoba, Canada. Polar bears on land exhibited a 5.2-fold range in DEE and 19-fold range in activity, from hibernation-like DEEs to levels approaching active bears on the sea ice, including three individuals that made energetically demanding swims totaling 54–175 km. Bears consumed berries, vegetation, birds, bones, antlers, seal, and beluga. Beyond compensating for elevated DEE, there was little benefit from terrestrial foraging toward prolonging the predicted time to starvation, as 19 of 20 bears lost mass (0.4–1.7 kg•day−1). Although polar bears on land exhibit remarkable behavioral plasticity, our findings reinforce the risk of starvation, particularly in subadults, with forecasted increases in the onshore period.

POLAR BEARS INTERNATIONAL

You may feel compelled to financially support as well as advocate for the conservation efforts to protect the polar bears. I personally have found Polar Bears International such an organization.

MORE INFO

©Ondrej Prosicky

www.youtube.com
USGS & WSU – Western Hudson Bay Polar Bear Energetics Study

www.nature.com
[1] Pagano, A.M., Rode, K.D., Lunn, N.J. et al. Polar bear energetic and behavioral strategies on land with implications for surviving the ice-free period. *Nat Commun* 15, 947 (2024).

polarbearsinternational.org
Can polar bears adapt to longer summers on land?

Introduction to International Association of Antarctica Tour Operators (IAATO)

By Hayley Collings

Antarctica, the frozen continent at the bottom of the world, has long captured the imagination of adventurers, scientists, and dreamers alike. Its vast icy landscapes, teeming wildlife, and extreme conditions have made it a magnet for exploration.

In recent decades, the region has become more accessible to nature-loving visitors, seeking to experience its majesty first-hand. But whether for work or pleasure, research or recreation visiting the great Antarctic wilderness (the largest remaining wilderness on earth) is a privilege which comes with an obligation to do so responsibly.

Since its inception more than 30 years ago, the International Association of Antarctica Tour Operators (IAATO) has taken a proactive role in managing the tourism aspect of human activity in the Antarctic environment. Working within the framework of the Antarctic Treaty System, IAATO has helped visitors have an enriching, educational experience while leaving the region as they have found it.

A Journey Through Time: The History of Antarctic Tourism

Commercial tourism to Antarctica started in the late 1950s when 500 or so fare-paying passengers travelled aboard Chilean and Argentine naval vessels each season to visit the South Shetland Islands on re-supply missions to research stations. The first vessel specifically built for the purpose of taking fare-paying passengers to Antarctica was the ice-strengthened m/v Lindblad Explorer built in 1969. She paved the way for tourists to visit and enjoy the continent by means of "expedition cruising" — defined by the industry as cruising coupled with education as a major theme.

By the late 1980s, four companies were conducting ship borne tourism to the Antarctic as well as one land operator who pioneered commercial tourism flights to Antarctica in 1985. These flights took guests to a seasonal inland field camp for guided climbs, ski expeditions, and other adventurous activities.

©Lauren Farmer

IAATO today has 111 members, 55 of which are companies that operate directly in Antarctica and 56 of which are Associates. Members are 1. tour operators; 2. travel agents that book their customers into operator member's Antarctic programs; and 3. companies with an interest in supporting responsible Antarctic tourism and IAATO's objectives.

Unlike traditional tourism organizations, IAATO does not seek to encourage travel to Antarctica. Instead, as a non-profit trade association, it works within the framework of the Antarctic Treaty System to set standards among its members to ensure that operations in the region are carried out safely, in a manner that respects the continent's unique environment and wildlife. In the simplest terms, IAATO's belief that Antarctic expeditions adhere to responsible and robust environmental practices at their core to create among visitors a greater understanding of the environment, Antarctica's value to global science; and how changes to the region can impact us all.

©Genna Roland

The Birth of IAATO

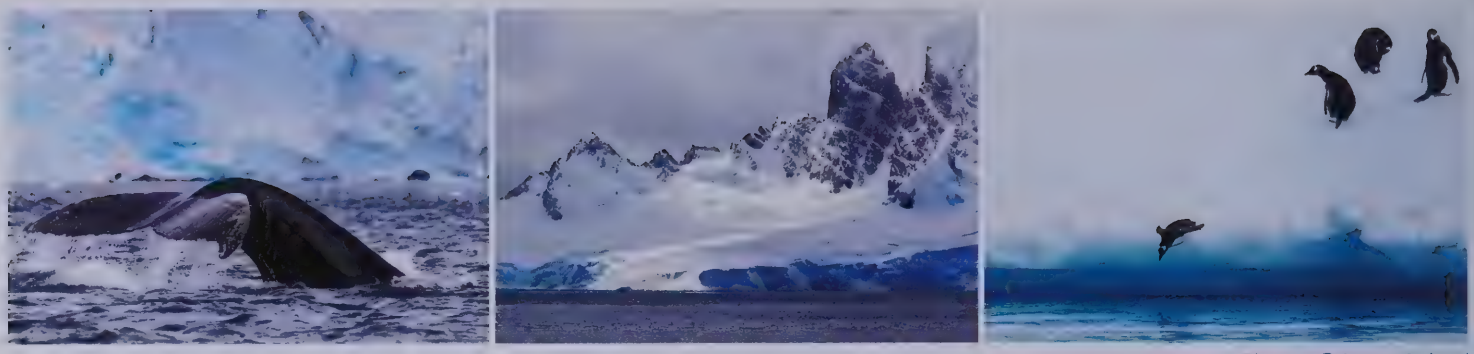
Seven companies that had already been operating expeditions to Antarctica for several years founded IAATO in 1991. The main impetus behind forming a global, non-profit industry association was two-fold. First, the signing of the Antarctic Environmental Protocol in early 1991 by the Antarctic Treaty nations established rigorous standards beyond those already outlined in the Antarctic Treaty of 1959. This treaty designated Antarctica as a "natural reserve dedicated to peace and science." Second, by joining together, the companies were able to pool resources and work with their national governments to develop substantive regulations and guidelines compatible with the best practices that were already being followed in the field.

By the 1991-92 season approximately 6,400 tourists visited Antarctica, traveling aboard 10 different expedition ships operated by six operators plus the land-based activities of the one land operator. New members continued to join IAATO at a steady pace.

Tourism Today

The 2022-23 Antarctic season, which ran from October 2022 to April 2023, saw 104,897 people travel with IAATO members, via both deep field and cruise expeditions. There were an additional 32,730 visitors who travelled on cruise-only vessels and did not set foot on the continent.

Growth has brought with it heightened scrutiny of human activity in Antarctica, and understandably so. The crisp, white wilderness has a place in the hearts of people around the world, none more so than those who have seen it for themselves and those charged with protecting it; IAATO members and staff among them. The mission of IAATO, while professional, is personal too; among this number there are naturalists, scientists, researchers, and record-holding explorers, environmental advocates, and those for whom Antarctica simply represents nature's crown jewel, and as with all precious things, its protection is paramount.



Photos: ©Genna Roland

Antarctica receives relatively few visitors compared to other destinations. Its unique attributes are subject to rigorous safeguards unmatched anywhere else in the world. For example, it is a condition of IAATO membership that member operators are operating under a permit or authorization from an Antarctic Treaty Party or relevant government. As part of this compliance process, they must also submit their Environmental Impact Assessment and permit / authorization to IAATO. If an IAATO organizer is registered in a country without necessary legislation in place (i.e., the country is not a Treaty Party or has not implemented the Environmental Protocol into their national legislation), the organizer must submit the equivalent documentation to the IAATO Secretariat ahead of the Antarctic season.

When in Antarctica, only ships carrying 500 visitors or fewer are allowed to make landings at approved sites and only one ship can visit each site at a time. The logistics of this are settled months in advance when operators input their planned schedules into IAATO's Ship Scheduler, a database which has restrictions on time, number of passengers allowed, and number of daily of visits to the sites around the Antarctic coast. These restrictions follow Antarctic Treaty System and IAATO requirements. In short, members book visits to specific sites and these make up the structure for their expeditions in the upcoming season. It is important to point out here that IAATO operators keep flexible itineraries to work around Antarctica's changing ice and weather conditions.

Guests ashore take nothing home but memories and leave nothing behind- no snacks ashore, unless for medical purposes; no taking souvenirs from the water's edge – and no "calls of nature" during landings. There's a staff to visitor ratio of at least 1:20 to ensure these policies are followed, but in truth, for the majority of guests, ambassadorship for this astounding place – and therefore exemplary behavior – is part of the experience.

By the time they reach Antarctica, guests understand their role in visiting the continent responsibly. They've received mandatory briefings, scrubbed their clothing and equipment clean, and had opportunities to attend lectures and workshops about wildlife, governance, and science, or even contribute to research themselves. Many take that enthusiasm home with them, moved by their experience to the point they want to continue acting for Antarctica long after their expedition is over. The IAATO Antarctic Ambassador Programme encourages this attitude while visitors are in Antarctica and provides inspiration and resources to help them continue it from home with small but impactful acts in their day-to-day lives.

An interesting point regarding IAATO standards is about small ships and yachts. Aside from small yachts (vessels carrying 12 or less), none of these passenger vessels operating in the Antarctic this season have operated outside of scope of IAATO guidelines.

Responding to Emerging Challenges

Visiting Antarctica responsibly is not without its challenges. For two Antarctic seasons now, tourists have been subject to enhanced protocols to prevent the spread of Highly Pathogenic Avian Influenza (HPAI), also known as bird flu.

Avian influenza is a devasting disease that is spread largely through bird migration and one that has made its presence intensely felt across the world. Since 2021 outbreaks have resulted in the death of hundreds of thousands of seabirds around the globe. Marine mammals, including seals and sea lions, have also been affected.

The Antarctic community, from Treaty Parties to scientists, researchers and IAATO tour operators, united to address the inevitability of the highly pathogenic avian influenza. This virus reached Antarctica as a seasonal avifauna which headed South, bringing in additional safeguards to enhance the robust procedures already in place to protect the region from pathogens and non-native species.

Sites are now assessed by IAATO members for signs of avian influenza in wildlife colonies before commencing any visitor landings, with operators prepared to cancel a visit or leave a site if any behavioral signs of avian influenza are detected. Minimum distances from wildlife must be maintained and sitting, kneeling, crouching, and lying down or leaving any equipment on the ground or snow, close to animal activity is prohibited.

IAATO is in close contact with its members and, following recommendations from the scientific community, where avian influenza is suspected sites may be closed. Polar stakeholders from the scientific community will be informed to enable specialists where possible to investigate and confirm.

Beyond the avian influenza, the approach to Antarctic wildlife protection in general is, as one would hope – robust, Member tour operators have enhanced their protocols to respond to new information and available data as it emerges.

With the celebrated resurgence of whales following centuries of industrial slaughter for meat and blubber came procedures

to mitigate strike risks from vessel operations in whale-rich areas. Since 2019 IAATO has introduced virtual geographical boundaries in the Gerlache Strait and adjacent waters, and Marta Passage entering Crystal Sound during specific months of the tourism season. Entering these geofenced time zones, triggers specific enhanced whale protection practices such as mandatory 10kn speed restriction for vessels and whale watching and whale avoidance training by all bridge teams operating in areas where whales are routinely seen.

During the 2022-23 season, IAATO supported a voluntary baseline collection of data related to whale and seal sightings from its members. From the results it was identified that whales were consistently present in the first half of the season in the Gerlache Strait and had a significant presence around the South Shetland Islands throughout the season. In recognition of this, operators agreed to trial an extension to the Gerlache geofenced time area from January 1 – May 30 to November 1 to May 30, as well as adding a South Shetland Islands geofenced (geofence is a virtual perimeter for a real-world geographic) time area from November 1 to May 30.

This year, when the Antarctic season comes to an end in April, and IAATO members gather for the association's annual meeting, IAATO will add more new and enhanced guidelines – as they have done year after year since 1991. Soon after the close of the season, IAATO will join Antarctic Treaty Parties for their annual Antarctic Treaty Consultative Meeting (ATCM), where IAATO is welcomed as an invited expert to provide advice on tourism-related issues in order to facilitate Treaty discussions on the management of human activity in Antarctica.

Caring for the southernmost continent really is a global effort and IAATO stands proud to play their part. Whether one is a seasoned traveler or someone dreaming of visiting Antarctica one day, it's essential to understand the role travelers play in protecting this delicate ecosystem.

Managing Expectations

Notably, another challenge has emerged with the growth of digital media, and that is managing expectations. While the rich blue sky and azure ocean gracing Facebook and Instagram are very real, Antarctica is also a place of gloomy horizons, biting wind and murky waters, so an open mind is an essential tool in the responsible visitor's armory.

Antarctic travel is not a cookie-cutter experience. In fact, part of the wonder of the region is its unpredictability. Lest we not forget that while it may be the most untouched, it is also the most hostile place on Earth. Bad weather or moving ice can often scupper[1] expedition itineraries, so it's always best to approach your trip knowing that if a Plan A landing doesn't come to fruition, contingencies plans will still provide an authentic Antarctic experience you'll treasure.

Would-be visitors to Antarctica are urged to visit the Guidelines and Resources section of the IAATO website. Advice is available regarding appropriate clothing; what to expect while on their expedition; biosecurity, including enhanced avian influenza protocols; wildlife guidelines; how to reduce single-use plastic use while travelling; and other responsible travel information.

Preparing for one's expedition by familiarizing oneself with their duties as a responsible visitor, means visitors too can be an Antarctic Ambassador; playing a part in ensuring that Antarctica remains a place of wonder and discovery for generations to come.

Editor's note: I love my British colleagues and their slang.
[1] British slang meaning to overwhelm, ruin, or disable.

Hayley Collings

A former local newspaper journalist in Southern England, Hayley Collings moved into communications and PR as a UK police press officer in 2010; supporting road traffic, major incident, and serious and organized crime teams. She then joined the Association of Chief Police Officers (now NPCC) where she became Acting Director of Communications, managing crisis and reputation issues within the UK Police Service and working with 10 Downing Street, The Home Office, COBRA and 44 police forces across England, Scotland, Wales and Northern Ireland.

A member of the Chartered Institute of Public Relations and an advocate for ethical practice and transparency, Hayley joined IAATO in October 2017 to support and strengthen the Association's mission of promoting the practice of safe and environmentally responsible private-sector travel to the Antarctic. She is currently the Director of Communications of IAATO

She and her family live in Sheffield, England.

Antarctic Treaty

IAATO and the Antarctic Treaty

IAATO Guidelines

Remembering an Authentic HERO

HERO at work in the bays and shallow waters of the Antarctic Peninsula (John H. Dearborn photo, from HERO Collection Antarctican Society)

By Charles H. Lagerbom

During a severe winter storm on March 4, 2017, National Science Foundation (NSF) Research Vessel ***R/V Hero (HERO)*** sank at its dock at Bay Center, Washington. Its end came, not with a bang, but like a tired prize fighter sinking to the canvas.

HERO was one of the last wooden ships built by Harvey F. Gamage at his shipyard in South Bristol, Maine. It was conceived, designed, and built in the 1960s as a wooden science floating platform for rugged Antarctic service. The ship was the vision of Arctic expert Jack Crowell, veteran of Donald MacMillan's forays into the North with the small wooden schooner ***Bowdoin***, also Maine-built.

HERO was designed by naval architect Stanley Potter, under Crowell's watchful eye. The two agreed on a sturdily built wooden trawler complete with sails, capable of working within the ice and bays of Antarctic Peninsula as well as Drake Passage, Tierra del Fuego, and Cape Horn waters. ***HERO*** was built by notable wooden shipbuilder Harvey F. Gamage once again with Jack Crowell at his side.

The three knew what they wanted. Crowell maneuvered the concept to fruition through the tangled bureaucracy of NSF and Washington, DC, while Potter studied earlier prototypical Arctic vessels like ***Bowdoin*** and Nansen's ship ***Fram***.

During construction, NSF and naval bigwigs journeyed up from DC to South Bristol offering comments, suggestions, and criticisms. The irascible Harvey Gamage would cut them short with *"We don't build it that way"* or *"That's not how we do things here,"* in his thick down-east accent.

On a bright sunny spring morning in March 1968, ***HERO*** rolled off the ways. Even at its launching, the vessel did things its own way, much like the attitude of its three founding fathers.

As the ceremonial champagne bottle shattered against its bow and the vessel started its slide to the water, ***HERO***'s upper reaches nicked the top of Gamage's building frame, causing the structure to slightly shake. With the band blaring and people cheering, one witness said, *"a hundred years' worth of pigeon poo softly wafted down onto all the finely dressed dignitaries and their wives as well as naval officers in dress blue uniforms."* ***HERO*** was on its way.

By December 1968, ***HERO*** was in Antarctic waters making its first visit to Palmer Station, its home while in the Peninsula. Palmer and ***HERO*** were to act in tandem for scientific research of the islands and bays of this part of the southern continent. Back in 1820, Nathaniel Palmer's exploration sloop had been named ***HERO***, when he was one of the first to site the Antarctic Peninsula.

HERO immediately went to work and for the next 16 years, did yeoman-like service in southern South America, Cape Horn and Antarctic Peninsula waters. With a cast of colorful captains and crew and scientists and adventures, ***HERO*** became the face of American science and diplomacy in the region.

Notable interactions, encounters and stories followed in its wake, such as their time with Jacques Cousteau and his ship ***R/V Calypso***, or the epic sailing adventure of David Lewis and his boat ***Icebird***. Volcanic eruptions, research station arsonists, Cold War connections with the CIA, Chilean and Argentine geo-politics, storms, and ice challenges as well as a front row seat to the 1982 Falklands Conflict all contributed to ***HERO***'s career.

Upon decommissioning in 1984, the ship wandered up the American west coast looking for a home and a purpose. Many ideas, dreams and schemes were floated, some more well-funded and thought out than others. For the next two

decades, ***HERO*** stood ready to serve some function, but nothing seemed to gain traction.

And a wooden vessel needs dedicated, constant upkeep. For a time, ***HERO*** resided in Reedsport, Oregon as crown jewel of a lavishly proposed Antarctic Exploratorium and discovery center. ***HERO***'s fate became intertwined with that of the American Polar Society (APS), whose journal *The Polar Times* even launched its comeback edition with HERO on its cover and calls for its financial support.

In the 1990s, APS officer Brian Shoemaker was instrumental in trying to make something of ***HERO***, the same time he helped resurrect the APS. But try as they might, Reedsport just did not work out and by the early 2000s, HERO went to other owners. In 2008, its final owner purchased ***HERO*** and hauled it to Bay Center, Washington. There It sat and rotted. For the next decade, the ship was pretty much forgotten, occasionally showing up in photos from old crew members who happened to seek it out. There was very little upkeep, the eccentric owner proved unwilling or unable to do much with it.

When ***HERO*** finally sank in 2017 in that severe winter storm, the old vessel had largely been abandoned and had become an environmental hazard threatening to contaminate nearby oyster farms. The State of Washington moved in and made plans to mitigate environmental concerns and salvage and remove the hulk.

Upon hearing this, members of the Antarctican Society approached Washington State Department of Natural Resources (DNR) and made a proposal. The Antarctican Society would take possession of some of the salvaged remains of ***HERO*** and transport them back to Maine for conservation and preservation.

DNR officials agreed, provided the society handled transportation costs and arrangements for whatever the contracted salvage company might set aside. There were no guarantees that anything would be saved.

But at the time the state had no money to salvage ***HERO***, so the ship joined a list of derelict vessels awaiting removal. In winter of 2021, Washington State legislature committed necessary removal and clean-up funds and Ballard Marine of Washougal, Washington was awarded the salvage job. They began removal process of ***HERO*** in summer of 2022.

The Antarctican Society was informed that fall that several pieces of ***HERO*** had indeed been set aside for them. Four anchors, steering mechanism and rudder, a winch drum and other ship hardware, a large section of keel and ***HERO***'s 3000 lb. bronze propeller were saved and now awaited transportation to Maine.

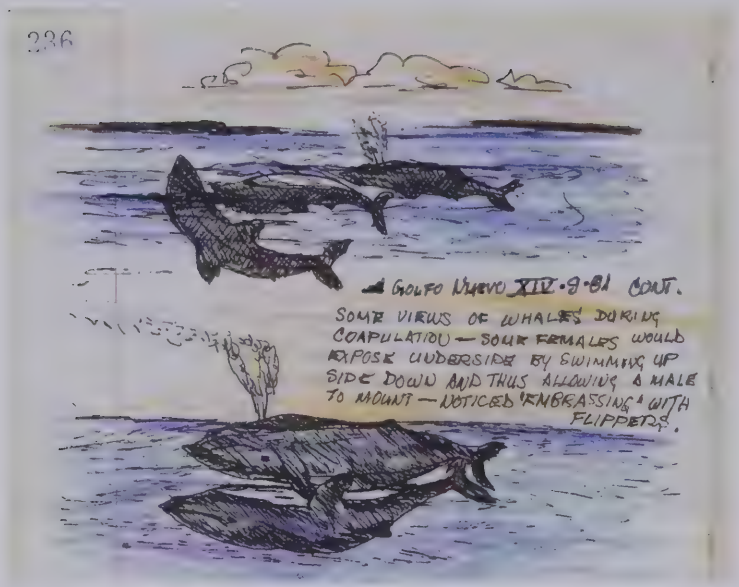
With help of a fundraising campaign from Society members, transportation costs were covered, and a trucking company engaged. The items, totaling over 17-tons worth of ship remains, were loaded in December.

The trucker fought ferocious snowstorms and ice, including a four-day shutdown on Interstate 80, but eventually reached

Jack Crowell and Harvey Gamage during construction of HERO at the Gamage Shipyard in South Bristol, Maine (Image from HERO Collection Antarctican Society)

HERO launching day on March 28, 1968
(Image from *HERO Collection Antarctican Society)*

One of the "grabber photos" staged for National Science Foundation on HERO's first and only foray into the Arctic for its summer 1968 shakedown cruise (John H. Dearborn photo, from *HERO Collection Antarctican Society)*


236
GOLFO NUEVO XII-9-81 CONT.
SOME VIEWS OF WHALES DURING COPULATION — SOME FEMALES WOULD EXPOSE UNDERSIDE BY SWIMMING UP SIDE DOWN AND THUS ALLOWING A MALE TO MOUNT — NOTICED 'EMBRASSING' WITH FLIPPERS.

Whale observations in Golfo Nuevo, Argentina from HERO first mate Willie Wilson's journal (HERO Collection Antarctican Society)

HERO rotting away (David Stams photo, from HERO Collection Antarctican Society)

Aerial drone photo of Ballard Marine Construction salvaging and removing derelict vessel HERO (Jeff Clemens *Chinook Observer* photo, from *HERO Collection Antarctican Society*)

Maine a few days before Christmas. Fifty-four years after its departure, ***HERO*** was back in here home state.

Two large Baldt anchors were preserved. On World Anchor Day in July 2023, they were donated to the Sail, Power and Steam Museum in Rockland, ME. Other items are being preserved, being worked on by Belfast Area High School students as part of their involvement with the school's Belfast Marine Institute.

This odyssey of bringing ***HERO*** home has grown to include other items from crew and scientists and others who sailed aboard the vessel. The ship barometer was recently donated to this ongoing effort to collect ***HERO*** materials for eventual donation to a local

*Captain Pieter Lenie with the bow anchors in seasonal ice off Palmer Station in the 1970s. (*Image from *HERO Collection Antarctican Society)*

On World Anchor Day, Charles H. Lagerbom presents a salvaged and preserved 814 lb Baldt anchors donated to the Sail Power and Steam Museum in Rockland, ME (Image from Ed Varney)

*HERO bronze propeller: one from Jack Crowell taken during launch day in March 1968 and the 3000 lb propeller back in Maine awaiting conservation efforts (*Images from *HERO Collection Antarctican Society)*

maritime museum. The ***HERO*** compass, radios and other bridge equipment have also been donated and are awaiting shipment east. Other ***HERO*** items have also surfaced. Ship blueprints were discovered in the National Archives in College Station, MD. They are to be used in the possible making of a six-foot detailed museum-quality model of ***HERO***.

The outpouring of interest and affection for the vessel has been readily apparent. Several have contributed photos, films, journals, mementoes, other ship items and all kinds of memorabilia to this effort. A manuscript about this incredible ***HERO*** story, its history and science, is being prepared for publication.

Charles H. Lagerbom

Charles H. Lagerbom is the Antarctican Society archivist and former Membership Chair of the American Polar Society. Charles spent two field seasons working in the Dry Valleys of Antarctica with a glacial geology research team from the University of Maine Quaternary Institute, now the Climate Change Institute. He is author of *The Fifth Man: Life of Henry Bowers* (1999), *Maine Whaling* (2020) and *Maine and Cape Horn: The World's Most Dangerous Voyage* (2021). He can be contacted at clagerbom@rsu71.org.

THE HERO FOUNDATION

REEDSPORT, OREGON

From the personal documents of **Robert Breyer**

2018 image of HERO sunk while Washington State decides its fate (Troy Wood Department of Natural Resources photo, from HERO Collection Antarctican Society)

Captain Brian Shoemaker had a distinguished 28-year career in the U.S. Navy. Brian served two tours in Vietnam as a combat helicopter pilot. He served in both Antarctica and the Arctic. In 1982-85 he returned to Antarctica as Commander of Operation Deep Freeze. He retired from the Navy in 1988 and became Secretary of the American Polar Society in 1993. Brian passed in 2017 and was buried at Arlington Cemetery with full military honors.

The Antarctic research ship *HERO* was named after the 47-foot-long sloop Hero commanded by Nathanial Palmer who was one of the first to set eyes on the Antarctic continent in 1820. The research vessel Hero was launched in 1968 for the National Science Foundation and was based at Palmer Station on the Antarctic Peninsula. It was retired in 1984 and sailed to Port Hueneme, CA.

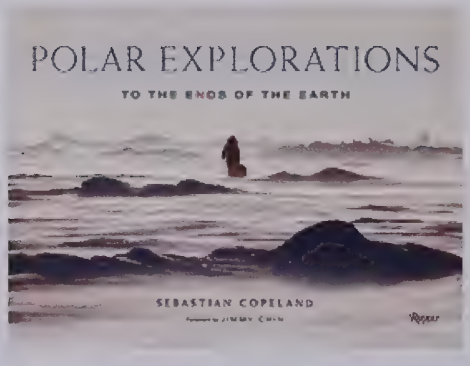
In March of 1985 the Port of Umpqua in Reedsport, OR, acquired the Hero for $5,000. Later that year a group of local citizens formed the nonprofit International Oceanographic Hero Foundation the "*HERO* Foundation" to preserve and promote the Hero as part of an Antarctica themed museum and educational center.

The City of Reedsport acquired $10,000 in Oregon lottery funds to study its waterfront development to be called the Antarctic Exploratorium. Plans included not only displaying the *HERO* but the retired Coast Guard icebreaker *Glacier*, a penguin display, a "cold room", and a small replica of the South Pole geodesic dome. The price tag for the development was estimated to be $20 million.

In the early 1990s Captain Brian Shoemaker joined the *HERO* Foundation. At Brian's suggestion the name of the project was changed to the Richard E. Byrd Antarctic Center and the Hero was moored and displayed at the Umpqua Discovery Center in Reedsport. Brian Shoemaker arranged for a statue of Admiral Byrd (copy of statue at Arlington Cemetery) to be displayed at the Center.

During this time frame Brian contacted Bob Breyer in Los Angeles. Bob, the oldest grandson of Admiral Byrd, followed in his grandfather's footsteps to work in Antarctica three years on the construction of the Dome South Pole Station. Bob earned a BS in Business and MBA degrees from USC. Professionally Bob's experience includes commercial architecture and real estate development. He was also a real estate broker specializing in government buildings and tax-exempt financing. Brian and Bob formed a "team" to assist Reedsport in developing the Byrd Antarctic Center. Bob had a feasibility study lined up by the same firm that did the Monterey Bay Aquarium, two architectural design firms specializing in major museum projects, and tax-exempt experts to offer a range of attractive financing options for Reedsport.

Unfortunately, the City of Reedsport couldn't raise nearly enough money on its own to develop the Center. It furthermore refused to approve long-term tax-exempt financing for the project. As a result, the *HERO* Foundation disbanded, the *Glacier* ended up being sold for scrap, and the *HERO* was sold to a private party who moored it to a dock in Bay Center, Washington, where it sank in 2017.



Sebastian Copeland is preparing a new book which will be released in Fall 2024. ***THE ARCTIC: A Darker Shade of White*** (Rizzoli 2024). Sebastian is currently in the process of finishing the layouts and is proud to have Dr. Jane Goodall to write the foreword. This book will be the third and last installment of a trilogy which started with ***ANTARCTICA : The Waking Giant*** (Rizzoli 2020) and ***POLAR EXPLORATIONS: To the Ends of the Earth*** (Rizzoli 2022).

The three volumes will be offered as a box set – as well as individually – and cover a magnum opus of sorts of my polar work over the last 25 years. A definitive look at the polar regions – not just the coastal world which we are quite familiar with, but also deep in the heart of the ice. Sebastian states, "I am not finished. It is just work 'to date' and I am proud of the body of work that it represents. Shooting in the very cold is not without challenge."

There is one image that Sebastin is especially fond of as of late. It is from northern Greenland. He commented, "It reminds me of the dawn of time, or more specifically, the end of one of Earth's Snowball stages, the latest being about 650 Ma. When the crust of ice that covered the Earth from pole-to-pole started its melting phase, it must have looked like this!"

Sebastian is headed to the Antarctic Peninsula in February with Exploris to lecture on their ship. He will be back in northern Greenland for 6 weeks between May and late June. He is also preparing a scientific mission in Antarctica for Dec'24-Jan'25 with his friend Prof. Ted Scambos in partnership with the French government, and NASA.

From The Wilson Center: No. 23 | The Joint Chiefs of Staff Look North

Security Implications and Military Consequences of Climate Change in the Arctic

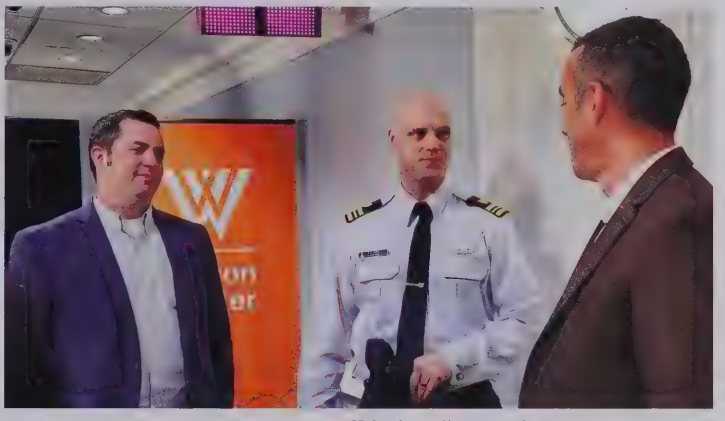
By LCDR Will D. Spoon & Dr. Tobias Etzold
on January 26, 2024

Climate change in the Arctic regions is happening three to four times faster than the global average, resulting in both new risks and opportunities. It gives Arctic and non-Arctic actors easier access, facilitating navigation, resource extraction, fisheries, and ecotourism. This development is likely to increase competition among countries and has created a risk of more incidents, miscommunications, and potential for conflicts over resources and territory. For these reasons, the Arctic is gaining strategic importance for multinational forces (MNF) within a NATO context. NATO increasingly recognizes the significance of the Arctic and implications of climate change. According to the NATO Vilnius Summit Communique of 11 July 2023 (NATO - Official text: Vilnius Summit Communiqué issued by NATO Heads of State and Government (2023), 11-Jul.-2023), taking into account Russia's capability to disrupt Allied reinforcements and freedom of navigation across the North Atlantic, "NATO and Allies will continue to undertake necessary, calibrated, and coordinated activities, including by exercising relevant plans" in order to meet this strategic challenge.

Global warming and increasing geopolitical competition in the Arctic make the necessity for military operations more likely, but at the same time, military operations are becoming more difficult, complex, and costly due to the changing environmental conditions. The challenges range from extreme and unpredictable weather conditions, difficult ice conditions, small breakaways from icebergs and glaciers threatening to damage ships, to permafrost thaw. The latter can undermine military infrastructure, ports and runways. Resources (personnel, equipment, finances) will be further challenged given the necessity to respond to the compounding effects of climate change on domestic and/or regional environments (i.e.,

Dr. Tobias Etzold, Senior Research Fellow, Norwegian Institute of International Affairs (Red Scarf)

LCDR Will D. Spoon, USCGR, Joint Staff (J7) - Allies and Partners Force Development Division (White Shirt)



CDR Tim Brown, USCGR Joint Staff (J7) - Allies and Partners Force Development Division (Blue Shirt)

search and rescue and disaster response). The extreme weather conditions will potentially restrict military mobility, survivability and sustainability, and also cause indirect implications such as resource fragility, and follow-on effects to governments and societies. Various capability and coordination gaps – for example insufficiency in resources and modern equipment, a lack in joint command structures and a lack in a persistent domain awareness from sea floor to space – restrict MNF abilities to address these challenges adequately. Enhancing MNF's Arctic capabilities requires a robust policy framework and better coordination of MNF policies and activities in order to maintain a strong and effective security presence in the region and to ensure an operational advantage over competitors.

There are almost as many collaborators, opinions, and efforts related to climate change in the Arctic as there are challenges for the region. One entity that may be lesser known for contributions to this body of work is the Joint Chiefs of Staff J7 Directorate for Joint Force Development. [1]

The J7 supports the Chairman Joint Chiefs of Staff (CJCS) and the joint warfighter through joint force development (JFD) in order to advance the operational effectiveness of the current and future joint force. The Allies and Partners Force Development Division (APFDD) provides direct collaboration and integration throughout the spectrum of joint force development and design in order to allow the Joint Staff, its Allies and partners to invest in required initiatives to ensure continued, interoperable and seamless operations together to meet objectives in the National Military Strategy. One of these initiatives is the Multinational Capabilities Development Campaign (MCDC) in which twenty-three nations and

international organizations work together to jointly develop non-material solutions to military problems.

The CLIMARCSEC project is one of eight projects within the current two-year MCDC project cycle 2023-24. It is led by Norway (Norwegian Ministry of Defense and Norwegian Institute of International Affairs) and includes the contributing nations of Austria, Canada, Germany, Netherlands, Finland, France, Great Brittan, Poland, Romania, Sweden and the United States as well as a number of observers. Each partner nation brings its own unique perspectives, challenges, and goals for the project. The project is halfway through a two-year cycle and is currently finalizing research in preparation for writing a multi-national concept that aims to provide actionable resources for partner nations.

Based on the above outlined background, the project's focus is on examining the current challenges to the military operating environment caused by climate change and competitive activity in the Arctic and how existing gaps in operational capability and governance of Multinational Forces (MNF) could be closed and future capability requirements be met. For this purpose, the project will aim to define the governance and capability gaps and propose multinational solutions that any nation's defense establishment may use to mitigate the existing and potential gaps in ever changing conditions. Within the wide range of military challenges and capabilities, the project focuses primarily on command, control, communication, and coordination capabilities necessary to lead effective MNF Arctic operations.

Success will require not just coordination across partner militaries who operate in the Arctic, but coordination with each country's civilian and academic experts. The CLIMARCSEC group was gathering US expertise in Washington, DC in November 2023 and were fortunate to be hosted by the Wilson Center for a round table discussion. The Wilson Center has provided valuable contributions as we explore the security implications and military consequences of climate change in the Arctic. The Wilson Center, as well as the Ted Stevens Center in Alaska and the US Committee on the Marine Transportation System (CMTS) and other project partners, sit at this intersection of military, civilian and academic expertise. We are grateful for the Wilson Center's continuing collaboration and look forward to jointly solving these whole of government challenges.

[1] *For additional details, see The Joint Chiefs of Staff J7 Directorate for Joint Force Development*

Author approval to republish:
Dr. Tobias Etzold, Norwegian Institute of International Affairs
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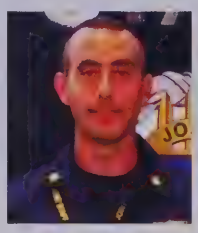
Wilson Center Approval to Publish received by Rebecca Pincus

Lieutenant Commander (LCDR) Will D. Spoon and Tobias Etzold



Lieutenant Commander (LCDR) Will D. Spoon *enlisted in the United States Coast Guard in February 2003 from Raleigh, NC. Upon leaving active duty in 2014 he took a civilian job in New Orleans, LA as the first General Service employee hired to help establish a new Federal micro-agency called the Gulf Coast Ecosystem Restoration Council (GCERC). He coordinated and facilitated the interaction of 11 Federal and State Council Members, State and agency liaisons, Tribal representatives, executive staff, working groups, and other parties to execute the new agency's restoration missions.*

His personal decorations include the Marine Safety Insignia, Coast Guard Commendation Medal (2 awards); Coast Guard Achievement Medal (3 awards) and numerous other team and unit service awards.

LCDR Spoon is now a team member on the Climate and Artic Security project for the Allies and Partners Force Development Division. In his civilian career, he consults with freshwater focused nonprofits to coordinate water quality efforts through partnerships with Federal, State, local governments, and other partners. He continues to voluntarily activate each year, including hurricane responses and three months on COVID support (2020).

Tobias Etzold *is a Senior Research Fellow in the Research Group for Security and Defense at NUPI. He works as project leader of the CLIMARCSEC (climate change, Arctic and security) project within the Multinational Capability Development Campaign (MCDC). Prior to joining NUPI, he worked as lecturer at the Norwegian University of Science and Technology (NTNU) in Trondheim and as researcher at the German Institute for International and Security Affairs in Berlin. With a wide study and research background in European integration and international relations, Etzold focusses in his research on the Nordic area including EU, foreign and security policies of the Nordic countries, Nordic-German relations, and regional affairs and cooperation (Nordic, Baltic Sea and the Arctic).*

Review

THE LAST PLACE ON EARTH

©Vadim ZH

The Last Place on Earth
Director: Ferdinand Fairfax | TV Miniseries 1985, 6h 36 min

Narrates the rivalry between Robert Falcon Scott and Roald Amundsen on being the first to reach the South Pole. Based on Roland Huntford's book of the same title.

By Andrés Paredes

The TV Series

The Last Place on Earth is a brilliant British TV drama series inspired by Roland Huntford´s book of the same title which was released in 1985. It was directed by Ferdinand Fairfax, who is also known for *Winston Churchill: The Wilderness Years; Egypt Untold*; and other risky but successful ventures from the 1980s and 90s. *The Last Place on Earth* was produced by a modest company called Central Independent Television which was the producer of other interesting historical titles such as *Sharpe´s Saga*. It brings to life over seven episodes a glorious and very well-known chapter from Polar exploration history; it was the race to the South Pole between Britain's Robert Scott and Norway's Roald Amundsen, which was a story that combines tragedy and glory.

Before *The Last Place on Earth*, the only film documenting the subject was *Scott of the Antarctic*, produced forty years ago (1948), which dared to bring Scott´s dramatic adventure to the big screen. It was clear by then that such an epic voyage, and the underlying controversial story, needed much more than the 110 minutes dedicated to the subject in that film. Even though there was another, much more bizarre, *Scott of the Antarctic*, a surreal comedy sketch that appeared in one of the episodes of *Monty Python's Flying Circus* (1970), it would take another 34 years for the release of the biopic *Amundsen* (2019), would come back to this story. The modern special effects provided made this kind of production more appealing. Polar movies and series could now merit a movie genre. There are already several not very well-known films that deserve to be known worldwide, such as: *The Flight of the Eagle, The Red Tent, Shackleton, Jens Munk*, and *Nova Zembla*.

The Story

There are many places in this world that could have the title *"The Last Place on Earth"* such as the highest and remotest mountains; lost corners of the Amazon rainforest; deserts. Perhaps the one that deserves it above all of these is the South Pole; probably the only place on Earth where climatic conditions resemble those of another planet. Located in the middle of a frozen desert 3,000m high and plagued by immense crevasses big enough to swallow entire cargo ships; where temperatures can drop, even in summer, to about-60°C and, unlike its northern twin, it is completely devoid of human life.

Britain's Robert Scott and Norway's Roald Amundsen.

The history of the discovery of the Antarctic continent started almost 250 years ago with James Cook´s second voyage circumnavigating the world and ended dramatically with the world-famous "Race to the South Pole", as it is commonly called. The race was undertaken by both, a British expedition, led by Robert Falcon Scott and a Norwegian expedition led by Roald Amundsen. The competition ended in tragedy for Scott and his four companions and in victory for Amundsen´s team.

Huntford quoted James Cook's words in his book. The quote seemed prophetic if one takes into account what happened over the following years of the South Pole siege:

> *"Doomed by nature to everlasting frigidness...whose horrible and savage aspect I have no words to describe; ... whoever has resolution and perseverance to clear up this point by proceeding farther than I have done, I shall not envy him the honour of the discovery, but I will be bold to say that the world will not be benefited by it."*

For Scott, the expedition was never intended to be a race. It was the necessary next step after a previous attempt undertaken in 1901-1904, which almost ended in tragedy for Scott, Bill Wilson, and Ernest Shackleton. It was only when Amundsen, who was supposed to attempt to reach the North Pole, decided instead to go South, that the two expeditions became a race to be the first.

The Production

The production is a delight for polar enthusiasts. The entire series is fanatically faithful to reality, with no detail left to chance. Clothes, equipment, sledges, supply boxes, hut, tents, are faithful to what can be seen in the original pictures taken on both expeditions. Everything was carefully studied and faithfully reproduced for the film.

Even Scott´s expedition ship, *Terra Nova*, is almost identical to the original. One would have thought that it was the very same one if it were not for the fact that the original had sadly sunk off Greenland shores in 1943. Amundsen´s ship, the mighty *Fram*, however, is less like the original, due to the fact that the actual *Fram* was built to a very singular shape, one-of-a kind. Mimicking it would have been extremely expensive.

Location

The chosen film location was Frobisher Bay on Baffin Island, where the harsh Arctic conditions conferred a very realistic atmosphere to many of the scenes where temperatures had to be similar to those endured by the expeditions. Working in that environment, with the cameras and the means available at that time, was surely an unforgettable experience for both actors and crew. However, though Baffin Island has an ice cap similar to those in Greenland and Antarctica and is surrounded by impressive ice falls, the scenes of the climbing of the Beardmore and Axel Heiberg glaciers to reach the Antarctic plateau, where many dramatic events took place, are not as spectacular as those filmed forty years before for *Scott of the Antarctic*, which shows a much more realistic landscape filmed on the glaciers of the Austrian Alps. Access was not as easy as it was in the Alps, so the result is somehow disappointing in this respect. If the TV series were to be made today, special effects of all sorts would flood the most iconic scenes producing something spectacular for the viewer. The use of drones for aerial shots would also have given it a very different perspective.

The Music

Every episode starts with a trumpet tune, 80s style, in which the shadows of the British and Norwegian flags, both planted at the Pole, merge together into a single shadow which forms an imposing cross foreshadowing what would happen. Like any other movie from the 80s, the soundtrack by Trevor Jones sounds as if it has been taken from the TV series *Knight Rider* resulting in a not very inspiring background. Drama needs dramatic music, and if it were produced today, the style would be very different. Current films use this resource to masterfully provoke tears and even goosebumps with their epic scores.

The Script

The story, as told by the playwright and movie scriptwriter Trevor Griffiths, tells a story which is not just the historic record of a tragic adventure, but also an explicit criticism of Scott´s expedition and British imperialism that shaped it, marked by often arrogant assumptions about how to conduct exploration. Trevor Griffiths' career indicates that he found in Huntford's works the perfect backdrop to portray his own ideas concerning the matter.

It presents a mixture of curiosity, pride, arrogance, culture, technology and prejudices of the time, which can be seen throughout the seven episodes. The series is a continuous criticism of Scott´s methods, so unsuitable to the climatic conditions and circumstances which together with continuous wrong decisions, eventually lead the polar party to their final fate. However, as a counterbalance, Amundsen is not perceived as the hero he could have been. Despite being a practical and experienced explorer who almost always took the right decisions, his true nature is revealed through his obsession with success and glory, and through the ghosts of jealousy that haunted him.

Huntford was a journalist who spent a great part of his life in Scandinavia, specifically in Norway where he learned to ski and studied in depth, some of the explorers considered the cornerstones of Polar exploration. Undoubtedly, his prejudices against Scott and the British approach to the Polar Regions were hardened during his years in Oslo. Interestingly, while Huntford dismissed the imperial attitude towards Polar Regions, Amundsen, as a child, read about the struggle and tragedy of the nineteenth century British expeditions to the North Pole and the Northwest Passage, Amundsen found this to be a source of inspiration which led him to become an explorer.

During the TV series there is a constant contrast between the somewhat arrogant concept of the British expedition as followed by Scott, which brought to the frozen shores motor sledges, horses, balloons, and cinema cameras. This contrasts with the much more modest style of the Amundsen Expedition which dug its base in the ice of the Ross Shelf, used light sledges and fur clothes. built igloos, used skis and dogs to a much greater measure than Scott. Everything was planned and designed following the most practical principles and based on vast experiences acquired during his former expeditions to the Northwest Passage (1903–06), where he learned the necessary techniques to survive in the Arctic environment from the Inuit, and before that in Antarctica with Adrian De Gerlache's Belgian Expedition (1897–99).

The Cast & Characters

All the characters of the series revolve around the two leading and opposing figures of Scott (Martin Shaw) and Amundsen (Sverre Anker Ousda, the actor from *Insomnia* 1997). The differences between these two men cannot be greater and are clearly palpable in many scenes. Scott is shown as an unstable and insecure man who confesses his doubts and weakness to his wife Katheleen Scott (Susan Woolridge), from whom he always desperately needed advice and determination. At the same time, Scott lets his true ambition and character rise like lava from a surface of apparent gentleness and fragility, breaking his usual calm speeches with uncontrollable outbursts of rage. Scott arouses pity at some points, when he is shown for what he was, no more than a mediocre Navy Captain needing a promotion; a soldier who did what he was told within the means he was provided while lacking the knowledge of how to overcome the difficulties he was ordered to confront.

Amundsen, on the contrary, is cooler in manner, though infested with unmanageable ambition and jealousy which deeply affects his decisions. The relationship between him and Hjalmar Johansen (Toralv Maurstad, a Norwegian actor and stage director who passed away last year) is tense from the moment that he joins the expedition by Nansen´s recommendation. Johansen had been the sole companion of Nansen's bold attempt to reach the North Pole (1893–96), and he enjoyed great fame in Norway by that time. For Amundsen, having such a heavyweight on board was hard to negotiate. This is evident for example when they boarded Terra Nova at the Ross Barrier and Lieutenant Campbell (Julian Fox)

Roald Amundsen and Robert Scott prepared for the elements.

introduced his men to Johansen as the national hero he was. Later, after Amundsen´s decision to hastily start a first attempt on the Pole, very early in the season against Johansen's recommendation, Amundsen is "told off" in front of the rest of his men by an outraged Johansen who blamed him for the almost tragic outcome. Amundsen, soon afterwards, excluded Johansen from participating in the final attempt on the Pole. After receiving the shocking news, the defeated Johansen walked back to the hut while sipping from what looked like a spirit flask. Johansen fell victim to alcoholism which eventually ended in him taking his own life in 1913.

Despite this obscure attitude, Amundsen is consistently seen as a natural-born leader. When he announces to his crew that he has acquired the *Fram* from Nansen, admiration is seen in his crew's eyes, since the ship was a national symbol of sure success. His leadership capabilities are often shown when he deploys unprecedented wisdom about how to behave in the Antarctic, a consequence of his experience acquired during his former expeditions.

The biggest contrast between the differences of these two men is evident in the way they behave when they reach the South Pole. While Scott cries on the shoulder of one of his companions, Amundsen smokes a cigar. Both actors bear a physical resemblance to the actual explorers, something that extends to the whole cast, though maybe best matched in the case of Scott rather than Amundsen. The latter, though tall like the man himself, was represented with a greater likeness in the recent biopic *Amundsen* (2019). Both Scott and Amundsen are not depicted as movie heroes but as human beings with their own strengths, weaknesses, and fears. They play energetic roles in a quite unique style but with certain points in common. The two men are intoxicated by an exaggerated determination which can be perceived in the actor´s deranged look in several scenes.

Though the story revolves around the two leaders, there are stellar interventions like that of the heroic Fridtjof Nansen, who is performed by Max Von Sydow, who had formerly

played the role of Salomon Andree in the Swedish film *The Flight of the Eagle* (1982) alongside Sverre Anker Ousda as his companion Knut Fraenkel. Nansen appears as the outstanding celebrity he was, a polar reference to all, someone everybody respects and asks for advice. His most poignant moment in the series is when he recites an excerpt from the song of Hakon:

> *"Cattle die, kings die; the self will also die. One thing I know never dies: the judgement over the dead."*

These words from his ancestors, regarding the fatal fate of Scott's expedition and the subsequent controversy, are something to consider.

Clements Markham (Alexander Knox), Nansen´s equivalent as a polar reference for the British, on the contrary is shown as a bad mannered, uncontrollable soul, full of rage, who doesn't hesitate to shout at the Secretary of the Royal Geographical Society when he ignores Markham, who is trying to prevent Shackleton from using Scott´s base in Antarctica for his own expeditions:

> *"I´ll get to an inquiry... and then I will take your hide off, Mr. Secretary."*

Markham´s interventions appear (through the eyes of the director and screenwriter) as if the whole British Empire were talking through the mouth of that obnoxious character, who squeezed Scott´s soul to such a limit that he could almost be held responsible for the poor captain's death. The behavior of both celebrities and their remarks reflects well the underlying foundations that defined the procedures of both leaders and the predictable outcome.

Other great actors of the time appeared on scene, as is the case of Brian Denehy, who plays the role of the controversial Frederick Cook, whose claim to be the first to reach the North pole, was responsible for Amundsen changing his primary target for its southern twin. Brian Denehy had participated previously in other polar movies like *Never Cry Wolf* (1983).

The list is almost never ending, Bill Willson is interpreted by Stephen Moore, known for *A Bridge Too Far*, Bill Nighy as Cecil Meares also participated in the brilliant series *Longitude*, and a very young Hugh Grant acts as the unfairly treated Cherry Garrard.

Accuracy

The TV series could be considered a documentary, a precise carousel of events and scenes that depicts events as they happened. It is filled with the necessary details and anecdotes that anyone acquainted with history would expect.

Making this kind of historical film accessible and attractive to the general public is challenging. So, to help to understand what was happening and appreciate the magnitude of the feat, at the beginning of each episode a map shows the route followed by both expeditions indicating the progress and position of each one in the race.

Scott and his team on the South Pole.

Amundsen and his party at the South Pole, Friday, December 14, 1911, about 3 p.m.

For those familiar with the story, it would have been "a crime" not to include historic quotes, like Shackleton's unforgettable:

> *"I thought you would prefer a live donkey to a dead lion."*

Or to include scenes of some of the most well-known episodes of both expeditions, like Scott´s tractor falling through the ice, the use of snow walls to protect the Siberian horses, the use of cinematographic cameras, the football match, and so on.

The fatal decisions taken by Scott, like his orders to decrease the distance over which to plant marker flags for their depots; the preference for manhauling instead of using sledge dogs; carrying forty pounds of fossils until the end; and taking an extra man to form a five-man final polar party instead of four. These examples have shown dramatic inflexion points that cause the British Expedition to slowly drift towards tragedy.

The realism of the film includes some gorier moments, for example, when the unbreakable determination of both leaders finds a common denominator when both order their horses and dogs respectively to be killed when conditions made it necessary. This is shown so realistically that there is even a shocking scene that seems to show a horse being beheaded in front of the camera. The scene of the killing of the horses at the bottom of Beardmore glacier is immediately followed by Scott´s men, forming a neat row, putting on their harnesses and starting to drag their heavy sleds up the glaciers themselves. Meanwhile, in clear contrast, the dog sled driven by Meares goes up smoothly and easily passes the struggling men.

Another poignant moment is when Scott decides at the last moment to take P.O. Evans with him on the final leg of the expedition to the south pole and tells Lieutenant Teddy Evans, his second in command and former rival to lead the expedition, to go back. An incomprehensible decision, like that taken by Amundsen regarding Johansen, which may have been one of the main causes for his demise. In a significant scene, the returning party gives a dispassionate three cheers to the captain with no smiles nor hope in their eyes. Scott looks back at them for a long time with a sarcastic gesture.

The scene showing the Norwegian party, after having reached the South Pole, dressed comfortably in fur clothes, accompanied by a happy tune, and going back home using sails to push their sledges, contrasts with that of Scott and his four companions pulling their sledges without any help, but that of their fatigued legs.

The effects of the cold are shown very realistically in several senses. Apart from what can be imagined from the actual climate conditions supplied by Frobisher Bay's weather, the frigid atmosphere can also be appreciated by the changes in their appearance and the encroaching frostbite, which is shown explicitly on the feet of Scott´s final polar party. The expedition was at that point a race for survival, an ordeal, a nightmare which included the disappointing fact that they were second to reach the South Pole and that more than a thousand miles separated them from safety.

Evans's collapse is also very well represented and meaningful. The poor soul tries to hide under a block of ice while shouting before dying "don't let them find me, don't let them find me". A cross marks his grave and, while again a trumpet tune fills the atmosphere and the remaining men start their way back, a narrator reads a paragraph from Scott´s journal which gives the necessary touch of drama saying that they still have 400 miles ahead and that "we are pulling for food".

Controversy is aroused in the scene where Scott suggests dividing the opium tablets among the men, while they are stuck in the tent due to a storm. The idea of introducing this possibility in the film, showing a defeated Scott trying to end the story by his own hand is tempting but both controversial and unprovable.

The actual iconic pictures taken during the expedition at the South Pole by Amundsen and Scott respectively, are reenacted through scenes which very accurately depict the moments for rejoicing of the polar enthusiasts.

Oates' mythical sacrifice surprisingly does not include the well-known theatrical quote: "I am just going outside and maybe some time", but a much more vulgar adaptation. The final moments of Willson, Bowers and Scott may perfectly have happened as was represented in the movie. Several voiceovers overlap reading farewell letters to their families and friends – which include Scott's assertion that there weren't any mistakes in the organization – add the necessary emotion to their slow end which shows how the three frozen statues one beside the other, Scott in the middle, journal and pen in hands, died quietly.

Conclusion

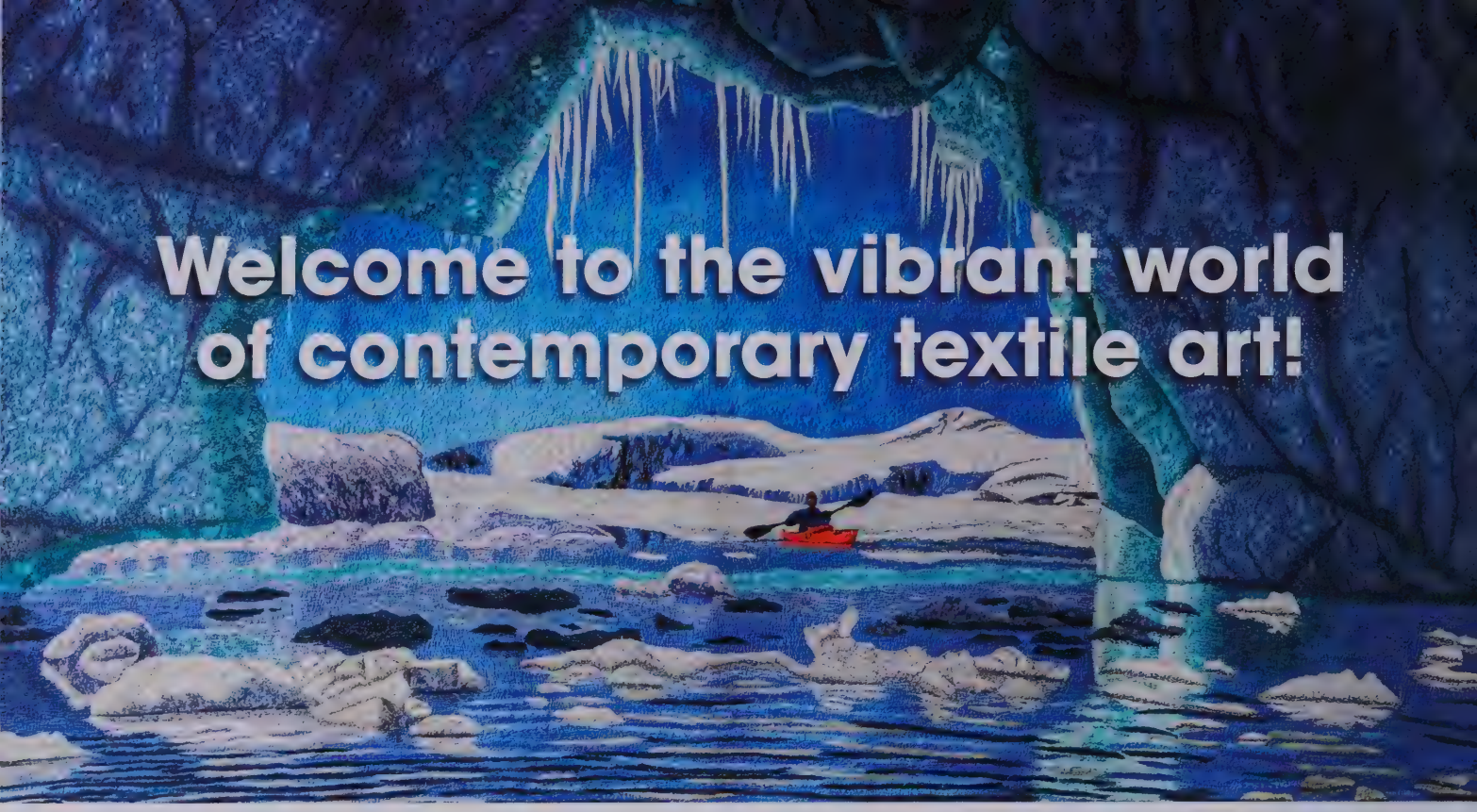
The finding of the tent the following spring with the three bodies inside and their journals, transformed men who could have been considered losers into glorious heroes. When news of the tragedy became known worldwide, especially through the published but censored journal of Scott, the public, especially in Britain, made Scott a national hero, almost a martyr, overshadowing perhaps, the outstanding victory of Amundsen who didn't lose a man and who apparently reached his target "easily" thanks to the use of his much more appropriate techniques, especially dogs. Since then, Scott's and Amundsen´s names have been forever linked, and supporters' and detractors' arguments can be found everywhere on newspapers, social media, interviews, books and journals since 1912.

Scott's advocates, like Ranulph FIennes argue that Scott was advanced for his time. He opened the doors to modern exploration, being the first to insist on using tractors, which are now the main means of transport on the continent. He brought the first portable camera, operated by Herbert Pointing. He led extensive scientific work in the field and, even though he was criticized for it, he was also a pioneer in manhauling sledges, which is now the only acceptable way to reach the south pole to be considered a true explorer.

It would be impossible to discern if Scott was right or wrong taking into account the boundary conditions. It was not one but the combination of many circumstances that played a role in the creation of the calamity. The song of Hakon was right when it said that the one thing that never dies is the judgement over the dead. Especially if one considers that verdicts usually come from people who have never endured experiences so devastating. Theirs was not a holiday adventure for a week, but an ordeal that lasted months, consumed their bodies, minds and souls, and was performed in the most difficult conditions. They almost made it, they were pretty close to arriving safely back at Cape Evans, and, if by any chance that had happened, the world's judgement would have considered Scott not second but first to come back walking and almost unsupported from the last place on earth, as modern explorers do now if they want to be respected.

Andrés Paredes

Andrés Paredes is an amateur scholar of classic polar expeditions. He is the author of the article "The Searching for the Northwest Passage and the Franklin expedition", published in the recognized journal *Archaeology and History of Despertaferro*. Andrés is the author of the blog *Kabloonas* focused on polar expeditions. He is the creator of the Facebook group "Polar Exploration" with more than five thousand members, and administrator of the "Remembering the Franklin Expedition" Group.



Welcome to the vibrant world of contemporary textile art!

The Polar Times Editor's Interview with **Janine Judge**, an award-winning artist from Perth, Western Australia with a passion for thread painting.

Editor: What is thread painting?

JJ: Thread painting is freehand machine embroidery. By disengaging the feed dogs on the machine, the fabric becomes more manoeuvrable, so the artist can guide the fabric manually for each stitch. This gives the artist the freedom to vary the stitch length and direction to create texture or seamless colour blending. It is like drawing or colouring except with the sewing machine. The artist must constantly switch thread colours, creating depth and building up layers to create the desired effect using the reference photo as a guide. With thread painting, the artist does not have the luxury of mixing colours like a painter but rather must have a large collection of threads. Well, that's my excuse for constantly buying more threads!

Editor: Where did your textile journey start?

JJ: I had an idyllic childhood in New Zealand living on 10 acres on the outskirts of Auckland. We raised a few calves; we had a couple of black sheep for their fleece; and had horses. It was during my teenage years, working the school holidays in a dress fabric shop, that I discovered the joy of creating with fabric.

I spent my 20's travelling extensively and met my husband on an overland trek through Africa. Amongst other trips we had 18 months travelling overland from England to Australia. We both enjoy taking photos and literally have thousands of photos from these amazing trips.

Over the years I tried lots of crafts and I guess you would say I was a "Jack of all trades, but master of none" type of person. I enjoyed them all for a while, but I wasn't passionate enough about any of them to stick with them long term. A turning point was when I came across a book on art quilting and later thread painting. Suddenly, I could incorporate my love of textile with creating something realistic. I had unlimited inspiration from all those photos we had taken travelling. Perfect!

I love to explore the amazing world we live in with its breathtaking landscapes, vibrant flora and intriguing fauna. Back in the studio (the formal lounge I have taken over!) I channel these experiences in fabric and thread using my sewing machine. My creative process typically begins with the background which is eco dyed or painted with sun dyes. Sun dyes are heliographic so react with the light when you scrunch them or add objects to them while drying. Next, I construct a fabric collage to outline the main design. Finally, the fun part, adding all the details with thread painting which brings the picture to life.

I think my choice to make realistic artwork comes back to my preference for things to be right or wrong, black and white not grey and open to interpretation. If artwork is realistic, anybody can appreciate it without having to know what the artist was thinking. Yes, there will be a back story which will add to the understanding but, even without that, it will still make sense and can be enjoyed by anyone. Creating realistic artwork also makes it easy to know when the piece is finished. I simply ask myself if

Editor's Note: *I became aware of Janine Judge artwork on an Antarctica related Facebook group. Her art intrigued me to find out more about her and her artistry.*

it looks realistic. If the answer is no, I keep going, adding more details and layers of stitching until it does. Can you tell I am self-taught and haven't come from a fine arts background?

Editor: What awards have you earned with your art?

JJ: My artistic journey has been punctuated by numerous awards, including multiple *Best in Show* awards at the Perth Royal Show, triumphs at the Australian Textile Art Awards and a series of wins at Quiltwest. My work has also graced the pages of the Art Quilting Studio magazine multiple times and even been featured on the cover.

Editor: How has polar expeditions inspired your artistry?

JJ: As far as artistic inspiration goes, few places evoke the sheer awe and wonder that Antarctica does. My fascination with Antarctica started in the 1980's when a friend travelled to Scott Base and returned with captivating stories and amazing photos of breathtaking scenery, unique wildlife and the historic huts of the Ross Sea Region. From then on, I was determined to make it a matter of when, not if, I got to visit. In 2019 we booked to go to Falklands, South Georgia and the peninsula for 2021 but, of course, those plans were scuttled by the pandemic. After several rescheduling's we finally got to go in December 2022.

To say the trip exceeded all expectations is an understatement. We were blessed with perfect weather and amazing wildlife encounters. I could go on about how fantastic it was but there is no point preaching to the converted, if you are reading this magazine, you already know what I mean!

Editor: What have you created to date regarding polar expeditions?

JJ: I started off with scenery; kayaking in Cierva Cove was special. We were crunching through small bits of brash ice and marvelling at the icebergs and ice arches that had carved from the glacier. The result was "Window to Paradise". It is my standard thread painting on a fabric collage but is much larger than I usually make being 101 cm x 171 cm and took about 3 months to create!

As we visited South Georgia, perhaps it was my attraction to King penguins... well maybe more than just one! I love how the King Penguin chicks are adorable round balls of brown fluff while the adults are sleek, majestic and black and white. How can these both be the same species? "Woolly Penguin" is 64 cm x 102 cm. The brown fluff of the chicks is needle felted wool rovings and the adult is wool felt. The background is sun dyed. Next there had to be a portrait of a King in all his glory looking inquisitive, this time it is thread painted.

After visiting Antarctica, I was concerned about the decline in the Adelie population where the sea ice has been affected by climate change. The Adelie's have such a personality. To highlight this the Adelie's in "Vulnerable" was created by stitching on washaway fabric to show the Adelie's vulnerability in a fragile environment. Once stitching is finished, the background dissolves in the washing process leaving behind the lacelike stitching. The edge is also irregular to show the sea ice melting away.

Lastly, I have stitched a black browed Albatross. Who isn't impressed by the masters of flight. On sea days, I could (and did) watch them for hours mesmerised by their grace as they effortlessly soared over the waves. It is my standard fabric collage with thread painted details on a sun dyed background. It is 100 cm x 80 cm.

Editor: Thank you for this exploration of thread painting. Is there anything else you would like to add about your passion for this art?

JJ: For an artist whose craft revolves around translating the wonders of the world using fabric and thread, this trip was a treasure trove of visual splendour. Every snapshot (all 3000 of them!), every mesmerizing vista, every wildlife encounter becomes a wealth of creative inspiration.

FOR ADDITIONAL INFORMATION

You can get exclusive peeks into my artistic process, upcoming projects, and behind-the-scenes look by signing up for my monthly newsletter on my website janinejudgetextileart.com. I am also on social media (Facebook and Instagram) @janinejudgetextileart.

While much of my work is inspired by my own photos, I also welcome commissions. I would love the opportunity to bring that special photo to life as a bespoke piece of art, especially if it relates to the polar regions. If I am going to spend hours looking at the intricate details of a scene, I prefer it is something that resonates with me!

ARCTIC INFERNO

This haunting image taken by Jeffery J. Nichols on August 17, 2023 shows the village of Enterprise, NWT after wildfires burned it to the ground.

Across the Arctic and Sub-Arctic, Intensifying Wild FiresWildfires Threaten National Security

By Barry Scott Zellen, PhD

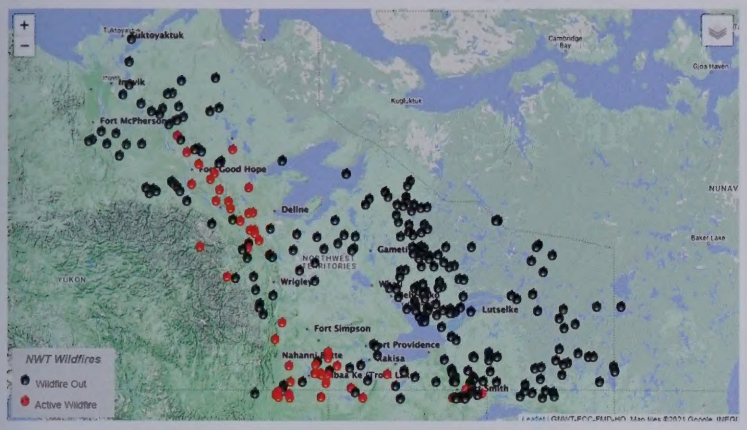
As a former resident of Yellowknife, capital of Canada's Northwest Territories (NWT), I was glued 24/7 to the ominous news out of northern Canada in late summer of 2023. Unprecedented wildfires engulfed the entire region in the worst fire season ever. The wildfires culminated in the full evacuation of all 22,000 residents from Yellowknife commencing 16 August 2023 as a menacing wall of fire and ash took aim at the capital city.

As NWT Fire Information Officer Jessica Davey-Quantick described to the Canadian magazine *Maclean's*. "By the end of September 2023, the NWT had recorded 303 fires, burning over four million hectares. That is about the size of Denmark; and well beyond the record set in 2014, colloquially known as the Summer of Smoke, when 3.4 million hectares burned. She noted the season started "hot" in May when over 4,000 people were forced to evacuate in the first of 14 evacuation orders over the course of the summer; in late July, the territorial government had imposed the largest fire ban in its history, covering the entirety of the North Slave and South Slave regions. By August, there were over 200 fires burning throughout the territory. Winds gusting up to 60 kph, unseasonable temperatures in the high 20°s (Celsius) and drought conditions combined to send multiple fires hurtling toward communities in the South Slave, devouring everything in their paths in a matter of hours.

I spoke with Canadian author and Arctic environmental expert Ed Struzik, whose recent books include two prescient tomes, *Firestorm: How Wildfire Will Shape Our Future* (Island Press, 2017) and *Dark Days at Noon: The Future of Fire* (McGill-Queen's University Press, 2022), who described this year as "the most intense fire season ever," adding, "Two-thirds of the Northwest Territories population was forced to evacuate for several weeks. The threat was territory wide. A research camp I was planning to visit on the coast of the Beaufort Sea was forced to evacuate because the smoke was so thick and unhealthy. It may be hard to believe, but many fires were still burning in mid-October when there is usually snow on the ground." More than four million hectares of boreal forest burned in the NWT in 2023. Struzik points out that fires burned more than 18 million hectares of Russian forest in 2021, setting a record since the country began monitoring forest fires using satellites in 2001. If the Yukon and Alaska had burned larger in 2023, the Russian record might have been surpassed.

Coming to a Boil

Indeed, while unprecedented for the NWT, Struzik recalls that "the Arctic and sub-Arctic has burned big in the past." As far back as 2004, "a record number of fires burned in the Yukon and



NWT Live Fire Map | November 8, 2023
This screen capture of the NWT Live Fire Map from November 8, 2023 shows the territory still aflame as winter arrived. Once winter snow was on the ground for the season, the NWT Live Fire Map ***www.gov.nt.ca/ecc/en/services/wildland-fire-update/nwt-live-fire-mcap*** *finally showed what residents and fire experts had long been hoping for: an NWT free of wildfires!*

Alaska. One complex of fires consumed over 1.7 million acres – almost the size of Vancouver Island." Struzik added, "we got a good sense of what was coming three years later when a fire burned more than 1,000 square kilometers of tundra on Alaska's North Slope. Tundra is almost too wet and cold to be ignited by lightning or a campfire. Permafrost can be up to 300 feet deep. There is no evidence of a fire as big as this burning the tundra in the last 10,000 years."

Since then, things have only continued to intensify. Alaska burned big in 2015. It began with a slow-moving thunderstorm that caused 62,000 lighting strikes in five days, triggering 286 fires. On June 20, there were 8,000 strikes in Alaska and several hundred more in the Yukon; the likes no one had ever seen. Ironically, one fire overran part of the Alyeska pipeline. Just last summer, Struzik was "visiting a climate change research station in the Dehcho region of the Northwest Territories. In late October, when there is almost always snow on the ground, a wildfire burned through it."

According to Struzik, "The rising number of fires in the Arctic and sub-Arctic is pure and simple, a symptom of a warming world. Very few fires are ignited by humans as they are in the south. Several things contribute to the severity. One-degree increase in temperature equals 12 per cent more lightning. More heat means more tundra and wetlands drying out and being primed for ignition. Wetlands are also important because they can slow or stop a fire."

A Common Threat to a Divided Arctic

Noting the collapse in pan-Arctic cooperation since Russia invaded Ukraine, I asked Struzik if the mutual challenge of wildfires presents us with a compelling reason to reach across the re-emerging East-West divide and to resume pan-Arctic cooperation on at least this particular challenge. His reply: "I wish it were so. But based on everything I've seen and heard from scientists so far, pan-Arctic cooperation is unlikely so long as Putin is in power." Struzik recalled how, "Following the catastrophic 2010 fire season, the German government offered money and expertise to help restore the hydrological regimes that keep Russia's peaty bogs, fens, and marshes wet, and their carbon sequestered. But on the day that Russia invaded Ukraine, German institutes – including the Succow Foundation – withdrew their support. Just weeks afterward, a Russian bomb in Ukraine likely triggered a wildfire in the forest around the Chernobyl nuclear site, a focus of another rewetting project."

Struzik cautions that this "cessation of scientific collaboration comes at a precarious moment for the Arctic. Environmental risks associated with sea ice loss, pollution, and shipping are increasing; Russia and other Arctic states are proposing new boundary lines along the continental shelf that would expand their claims over the Arctic Ocean seabed; and peatlands have been continuing to burn after a year of record-setting wildfires in northern Russia, adding substantially to the nation's greenhouse gas emissions. (Russia is the world's fourth-largest emitter of greenhouse gases.) In addition, China is ramping up

Yellowknife Fire | August 8, 2023
On August 8, 2023, the Moderate Resolution Imaging Spectroradiometer on NASA's Aqua satellite captured this image of dense plumes of smoke streaming from dozens of large fires in the Northwest Territories. Several ominous fires raged around Yellowknife, the NWT's capital and largest city, where firefighters conducted controlled burns around the city's perimeter that kept the fires at bay. The NWT wild fires followed major outbreaks of fire in Alberta, British Columbia, Nova Scotia, and Quebec in May, June, and July of 2023.

its economic interests in the Arctic." Struzik's takeaway: "The Arctic has long been a model for optimism and international cooperation. A lot needs to be done to keep it that way."

The 'New Normal' Is Anything But

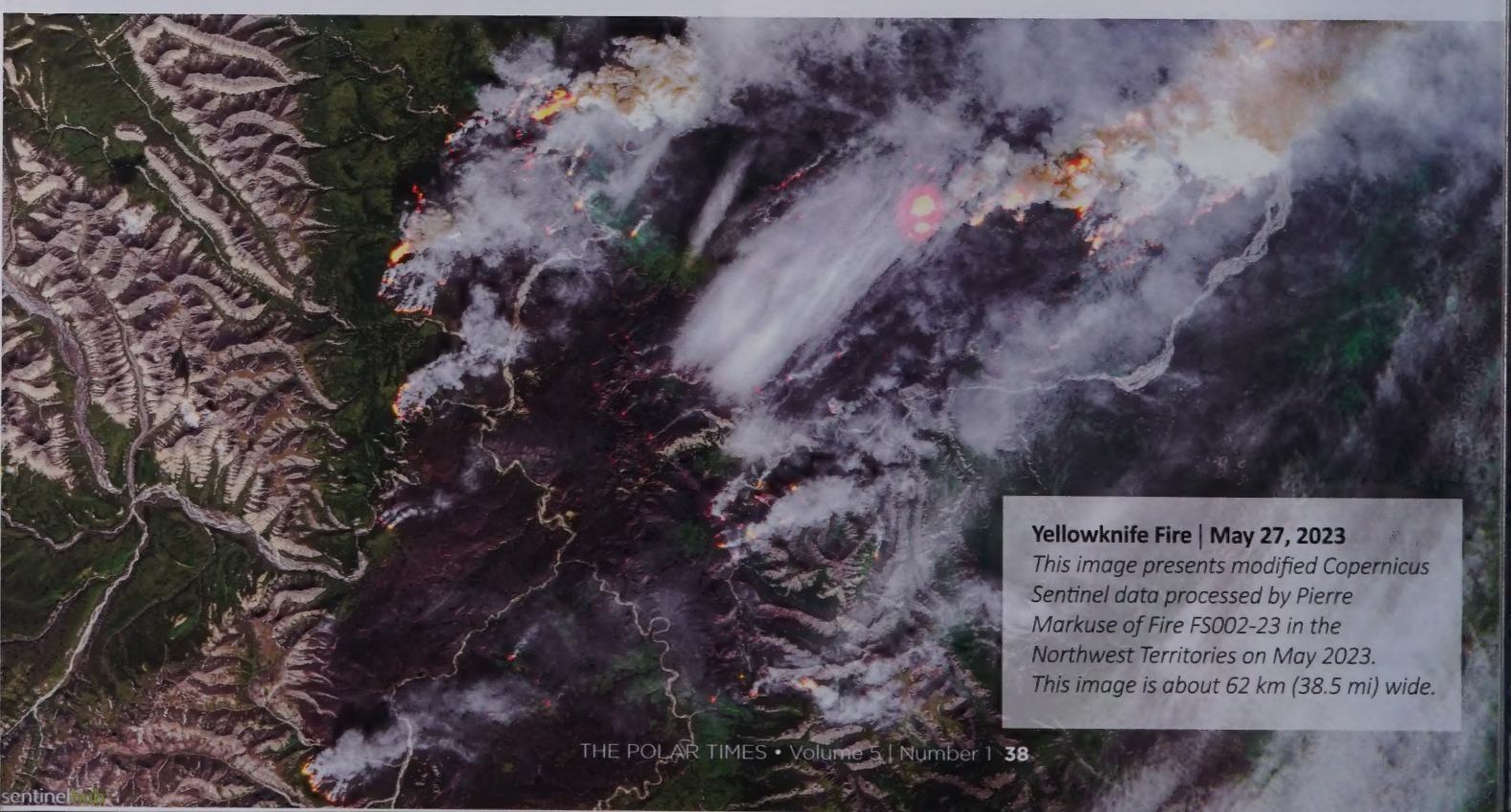
As Struzik explains, "What happens in the Arctic matters to the rest of the world. There are many examples to drive this point home. One of the most impactful is the jet stream, which manufactures weather and moves weather from west to east. The strength of the jet stream is dependent on the difference in temperature between the Arctic and mid-latitudes. The larger the difference, the stronger the jet stream. As the temperatures difference wanes in this warming world, the jet stream weakens. That's why we see heat domes building in places like British Columbia which has been hard hit by wildfires since 2017. The jet stream is not strong enough to move it and allow wet Pacific moisture to move in."

I asked Struzik if we are now at war with nature in the Arctic, and if perhaps nature is now striking back? His reply: "The force and advantage is with nature. You can't heat up the pot, as we are doing in the south, and not expect things to boil over." Struzik commented that he's "heard many people refer to this new wildfire paradigm as the 'new normal'. But there is nothing normal about what is happening. Almost each year since the turn of the century has brought something new and unexpected, as Struzik points out in his book *Dark Days at Noon: The Future of Fire*, "unless we come to grips with this new reality, nothing will be normal."

Yellowknife Fire | August 16, 2023
This satellite photo from NASA's Earth Observatory shows a detailed view of a fire burning to the northeast of Yellowknife. At the time, active fire fronts appeared to be within 20 kilometers (12 miles) of the city. Recently burned areas appear gray, and unburned forests are green. When the image was acquired, smoke streamed to the northeast.

Barry Scott Zellen, PhD

Barry Scott is a Research Scholar in the Department of Geography at the University of Connecticut.



Yellowknife Fire | May 27, 2023
This image presents modified Copernicus Sentinel data processed by Pierre Markuse of Fire FS002-23 in the Northwest Territories on May 2023. This image is about 62 km (38.5 mi) wide.